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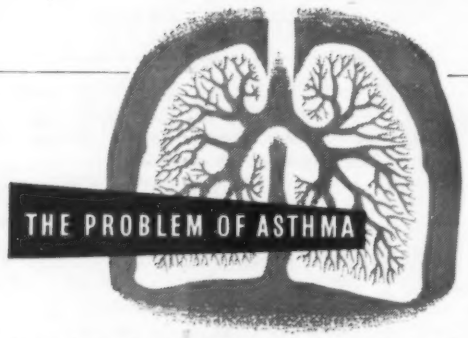

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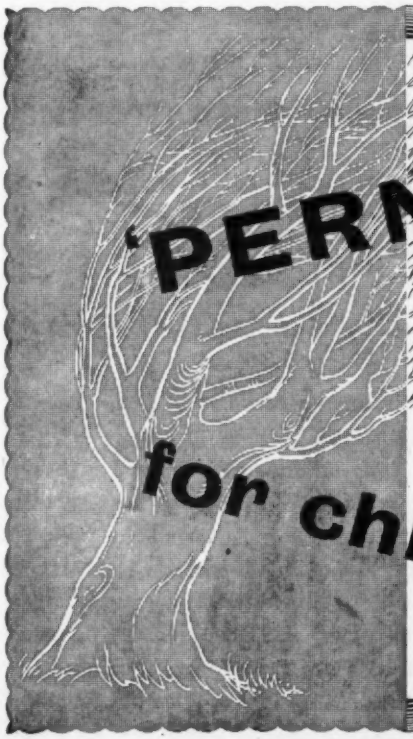

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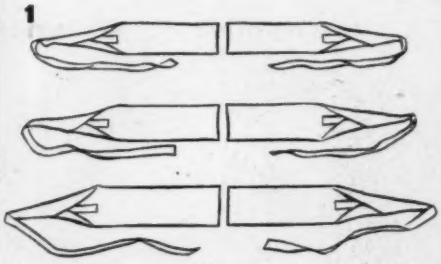

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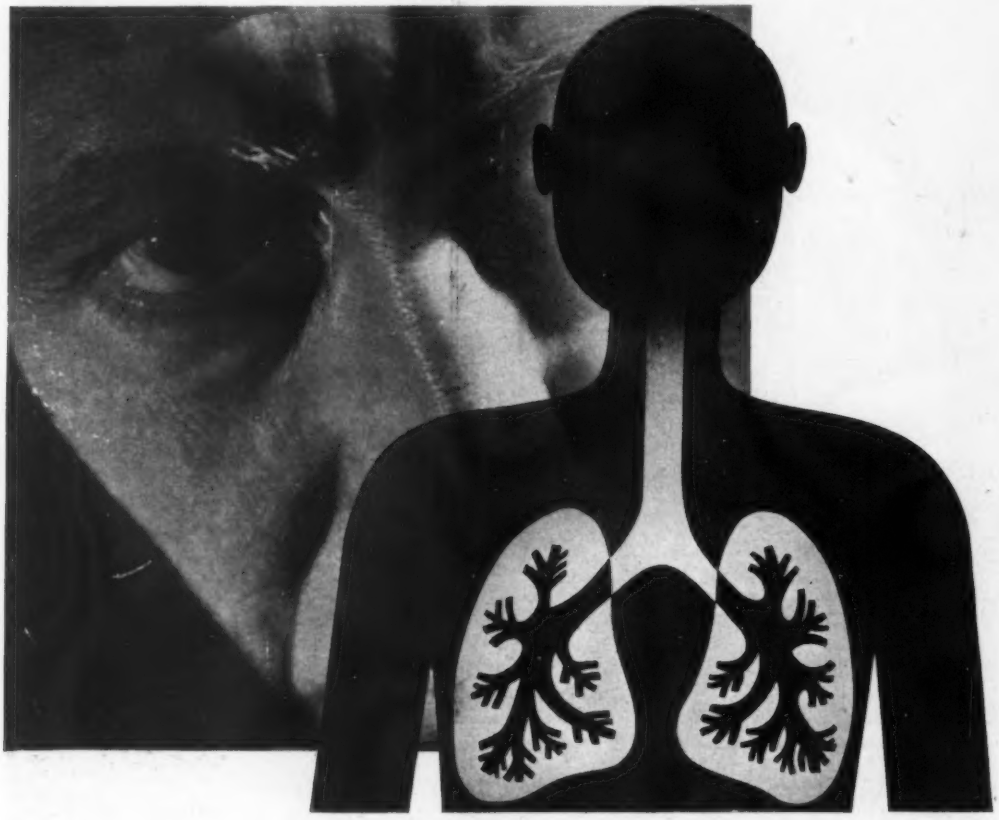
Cyanamid OF GREAT BRITAIN LTD., London, W.C.2



Bronchitis or Asthma?

Regular administration of Franol through the winter will usually keep the chronic bronchitic patient free from acute attacks.
In Bronchial asthma Franol is well known as a valuable prophylactic. Both the number and severity of attacks are reduced and the patient's continual fear that an attack may occur at any moment is allayed and his confidence restored.
Franol, which is a combination of a bronchodilator, an antispasmodic and a sedative is well tolerated by both adults and children.

Medical literature is available on request.

Franol relieves bronchospasm

Trade Mark

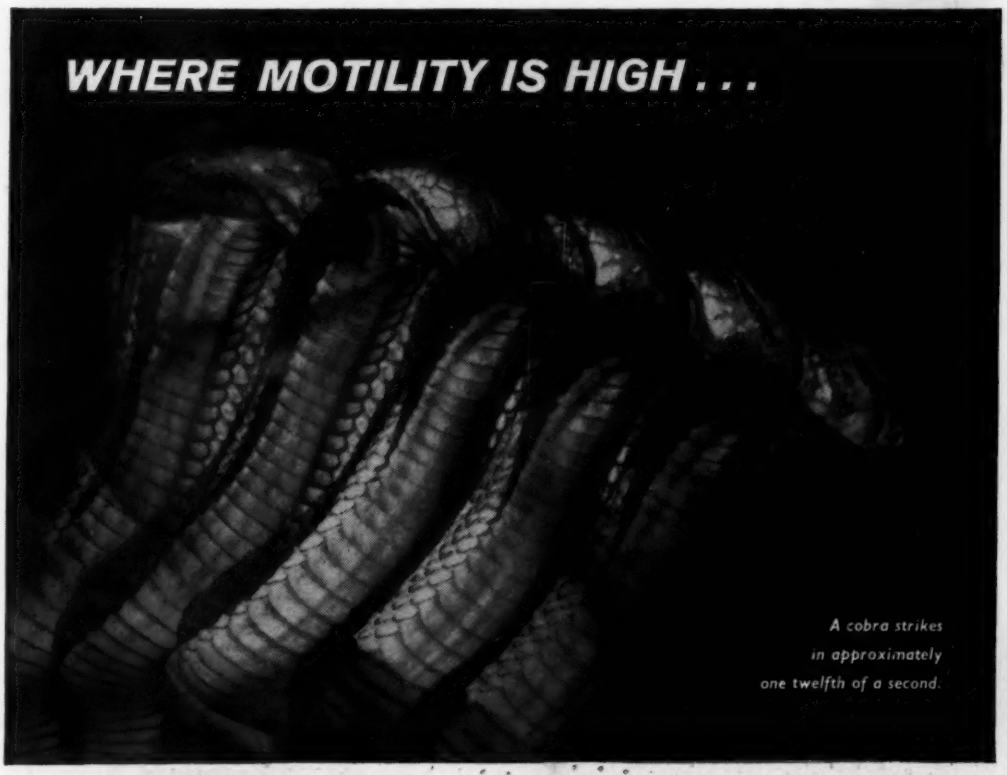
The basic N.H.S cost of one week's treatment (2 to 3 tabs. p.d.) 9½d to 1/2½d.

Tablets : Ephedrine gr. 0.15, theophylline gr. 2, Luminal gr. ¼. In bottles of 100, 250, 500 and 1000 and tins of 5,000. (S.4)

Bayer Products Limited
Neville House, Kingston-on-Thames, Surrey.
Associated exporting company : Winthrop Products Ltd.

BAYER

WHERE MOTILITY IS HIGH . . .



A cobra strikes in approximately one twelfth of a second.

MERBENTYL

'Merbentyl' effectively reduces the hypermotility of the gastro-intestinal tract

1. 'Merbentyl' has a twofold action. It is an anticholinergic and it also exerts a direct relaxing action on the smooth muscle of the gastro-intestinal tract similar to that exerted by papaverine.
2. 'Merbentyl' is virtually free from the side effects associated with the older antispasmodics, such as belladonna, and is more effective.
3. 'Merbentyl' is available in tablet form, each tablet containing 10 mgm. dicyclomine hydrochloride, or as a pleasantly flavoured syrup containing 10 mgm. in each 5 c.c. Both forms are available combined with phenobarbitone.

'Merbentyl' may safely be given to young children. Infantile colic responds dramatically to its administration.

Nervous indigestion, the bane of the elderly, responds very satisfactorily to 'Merbentyl' therapy.

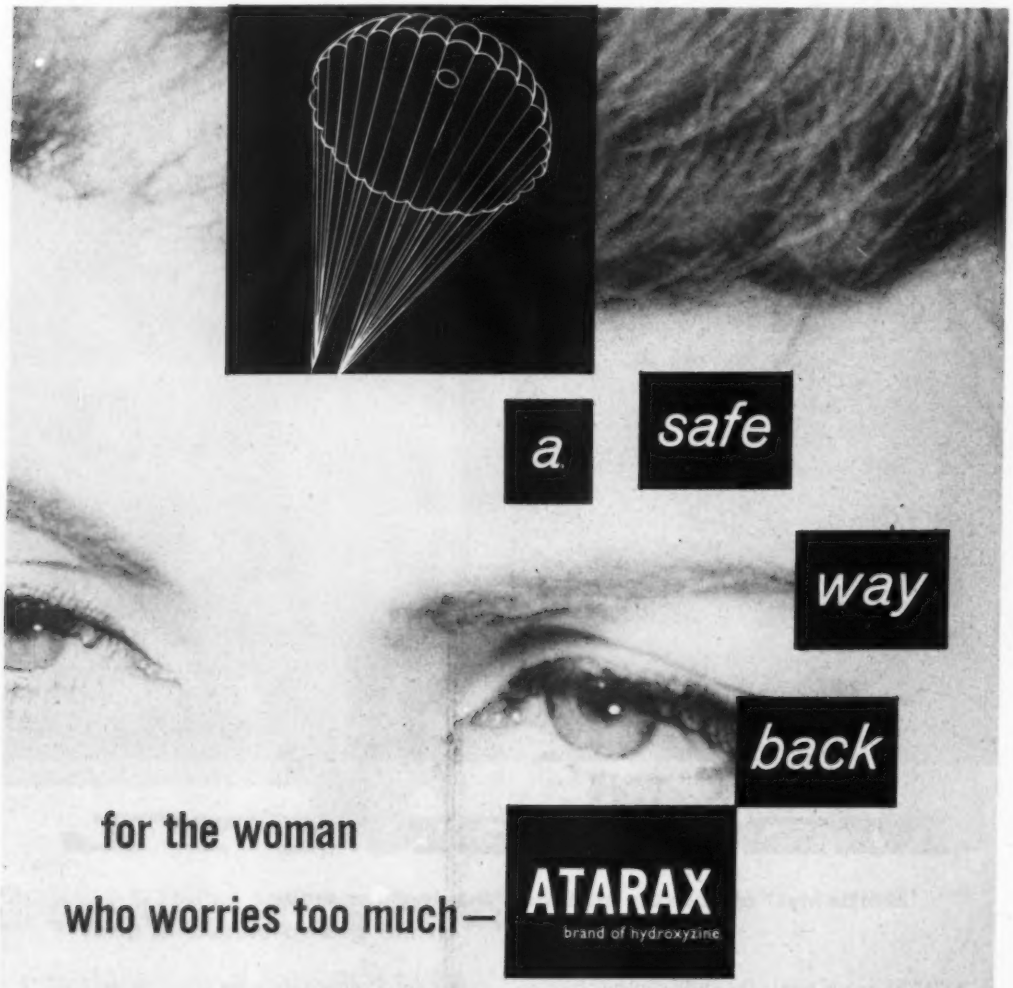
In the treatment of peptic ulceration the administration of an antispasmodic together with antacids has become virtually routine. For this condition a special preparation 'Kolantyl' has been formulated. (See separate literature)

DOSAGE Two tablets or two teaspoonsful of syrup three times a day.

'Merbentyl' is a registered trade mark of the Wm. S. Merrell Co., London

Merrell Research

Distributed in the United Kingdom and Republic of Ireland by
RIKER LABORATORIES LTD., LOUGHBOROUGH, LEICS.



for the woman who worries too much—

ATARAX

brand of hydroxyzine

Atarax offers this woman a safe way back to a balanced, well-adjusted life. Without clouding her consciousness or impairing her ability to 'cope', Atarax restores her peace of mind, gives her an interlude when she can see her real situation, assess her troubles accurately, and apportion her energies accordingly. Above all, Atarax is safe. Even when high dosage is needed it can be given without the risk of uncomfortable or distressing side effects which, so far from helping the patient, merely leave her more food for worry.

DOSAGE AND ADMINISTRATION. The dosage of Atarax may be varied widely, depending on the condition of the patient. Atarax should be administered in divided doses throughout the day with meals.

ADULTS. One 25 mg. tablet three or four times daily at appropriate intervals. More serious cases under psychiatric supervision may require doses of 150 mg. to 300 mg. daily. The dosage may be gradually decreased until the minimum effective maintenance dosage for the individual is reached.

CHILDREN. From 3 to 10 years of age, one or two 10 mg. tablets, or teaspoonfuls of Syrup two to four times daily.

Atarax tablets, 10 mg. and 25 mg., in bottles of 20 and 100.

Atarax Syrup, each teaspoonful (5 ml.) containing 10 mg. hydroxyzine, in 4 fl. oz. bottles.

Pfizer

PFIZER PHARMACEUTICALS

Manufactured at Sandwich and processed at Folkestone, Kent

**Registered Trade Mark* 063/P

pleasant-tasting

Paladac

liquid vitamin supplement

Children take Paladac without fuss or bother because it "tastes good".

Mothers like to give it because Paladac is readily accepted, flows freely, needs no refrigeration, and may be added to milk, fruit juice and other foods, or taken direct from a teaspoon.

Doctors can prescribe Paladac with confidence since it provides a reliable daily source of vitamins—one 4 c.c. teaspoonful supplies 7 vitamins in amounts exceeding minimum daily vitamin requirements.

Primarily intended for the 3-10 age-group, Paladac is equally suitable for adolescents and adults where liquid medication may be preferred.

Paladac is supplied in bottles of 4 and 16 fl. ozs.

Each teaspoonful (4 c.c.) contains:— Vitamin A 5,000 units, Vitamin D 1,000 units, Vitamin B_1 (Aneurine Hydrochloride) 3 mg., Vitamin B_2 (Riboflavin) 3 mg., Vitamin B_6 (Pyridoxine Hydrochloride 1 mg., Nicotinamide 20 mg., Vitamin C (Ascorbic Acid) 50 mg

Parke, Davis & COMPANY, LTD. *(Inc. U.S.A.) Hounslow, Middlesex. Tel: Hounslow 2361*
700

PRO-BANTHINE* IN ULCER HEALING

FIG. 1. *"But X-ray study at this time still revealed the ulcer niche."*

FIG. 2. *In ten weeks "the niche was no longer visible radiologically or gastroscopically."*

Clinical Report on Pro-Banthine

The case-history below of ulcer on the gastric side of gastro-jejunal stoma reveals significantly the high potency in low dosage of the well-tolerated anti-cholinergic agent, Pro-Banthine.

M. D., female, age 48, had a posterior gastro-jejunostomy fourteen years previously for duodenal ulcer. Nine months prior to her first visit severe intractable pain recurred and a subtotal gastrectomy was performed at another hospital. She remained well for a few months and then because of recurrence of severe pain and marked weight loss, she was referred for treatment. X-ray study revealed a large ulcer niche on the gastric side of the anastomosis. Antacids and sedatives gave no relief from pain. She was given 45 mg. of Pro-Banthine four times a day and within seventy-two hours was able to sleep through the night for the first time in weeks. After two weeks of Pro-Banthine treatment the patient felt completely well, but X-ray study at this time still revealed the ulcer niche (Fig. 1). After a further ten weeks' treatment the niche was no longer visible radiologically or gastroscopically (Fig. 2). In the five months prior to the report she was maintained on 30 mg. of Pro-Banthine four times daily without any recurrence of symptoms.

Pro-Banthine is the safe, potent anti-cholinergic agent which effectively controls excessive parasympathetic activity in the gastro-intestinal and genito-urinary tracts.

Pro-Banthine tablets containing 15 mg. of propantheline bromide are available in bottles of 40, 100 and 1000 tablets.

Parenteral Pro-Banthine is available in vials containing 30 mg. of propantheline bromide as a dry sterile powder, in boxes of 6 and 25 vials, for injection where needed.

Pro-Banthine with phenobarbitone tablets (15 mg. of each) are available in bottles of 40, 100 and 1000 tablets. G. D. Searle and Co. Ltd., High Wycombe, Bucks. Telephone : High Wycombe 1770.

* *Registered Trade Mark*

SEARLE

PB : P97

The intravenous injection that 'buys' time for your patients in

Severe shock
Overwhelming infection
Burns
Allergic emergencies

INTRAVENOUS EF-CORTELAN

TRADE MARK

(hydrocortisone hemisuccinate Glaxo)

New, water-soluble ester of hydrocortisone for injection in small volume when a rapid, intensive response is required.

When time is at a premium Intravenous Ef-Cortelan is priceless. It helps the patient "hold-out" until other therapeutic or resuscitative measures can be employed. The injection can be completed in 30 to 60 seconds —the effect develops rapidly and usually lasts from 4 to 8 hours.

THE COMPLETE PACK: in a single dose vial. 100 mg. of hydrocortisone as freeze-dried hemisuccinate sodium—fastest acting form of the hormone. 2 cc. Water for Injection in an easy-to-open snap-top ampoule

GLAXO LABORATORIES LTD., GREENFORD, MIDDLESEX BYRON 3434

Subsidiary Companies or Agents in most countries.

Makers of ALL you need for corticosteroid treatment

15

Original Everest Expedition photograph
kindly supplied by the
Swiss Foundation for Alpine Research

On top

Bellergal tablets
were carried
to the summit of Everest
by the members of
the 1956 Swiss Expedition
and widely used to counteract
the psychosomatic effects
of stress at high altitudes.

Bellergal

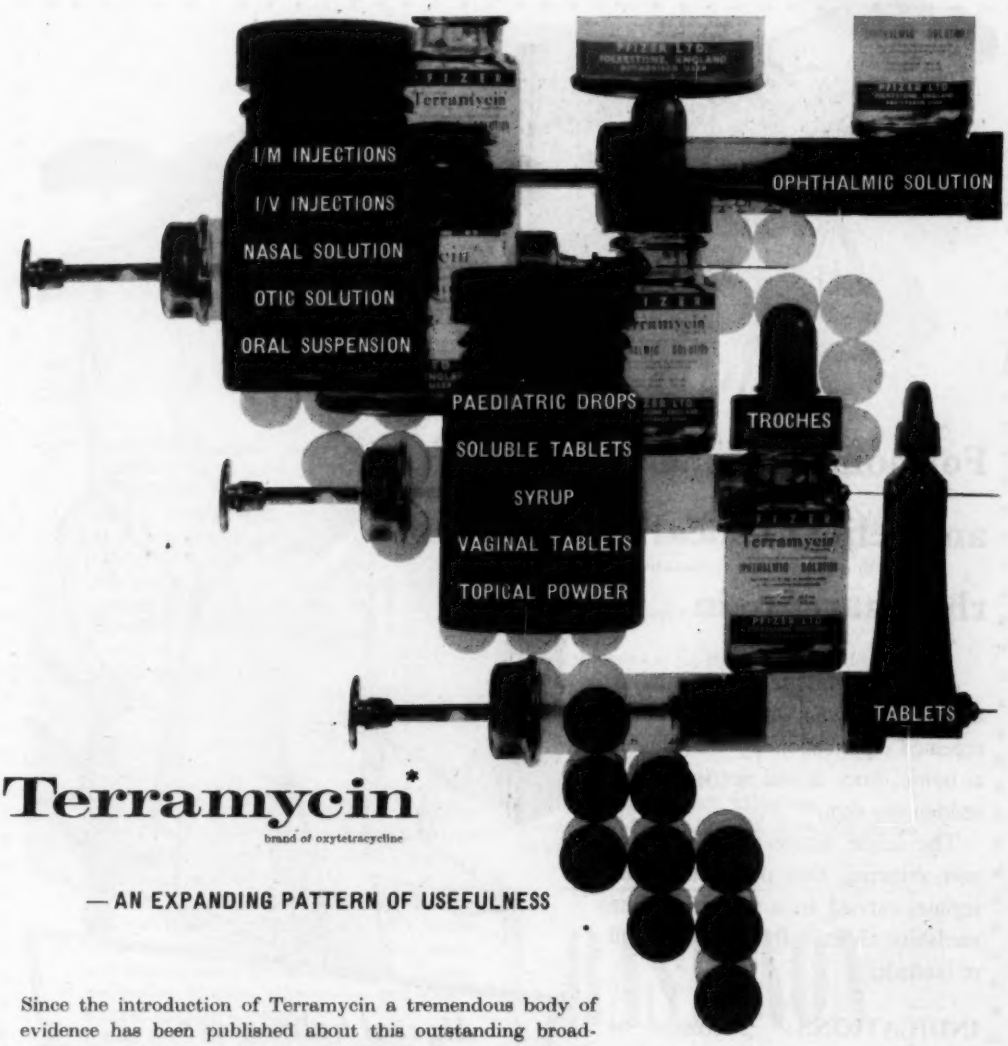
BY **SANDOZ**

is effective at all levels (central,
sympathetic, parasympathetic)
in the symptomatic treatment
of a wide variety
of psychosomatic disorders.

0.1 mg. total alkaloids of belladonna
0.3 mg. Ergotamine Tartrate B.P.
20 mg. Phenobarbitone B.P.

Sandoz Products Limited

Sandoz House
23 Great Castle Street
London, W.1



Terramycin*

brand of oxytetracycline

— AN EXPANDING PATTERN OF USEFULNESS

Since the introduction of Terramycin a tremendous body of evidence has been published about this outstanding broad-spectrum antibiotic. Today, its value is known and established in almost every type of disease where infection is a factor. Following the course of this development we have introduced a wide variety of dosage forms, so that the clinical effectiveness of Terramycin should be enhanced by convenience and acceptability of presentation.

The very bulk of the available evidence becomes almost an embarrassment to the busy practitioner who—having accepted the clinical value of Terramycin—wants a concise picture of indications, dosage, therapeutic effect, and possible side effects, in some specific condition. To overcome this problem we are preparing a series of brief monographs on the use of Terramycin in specific groups of indications. The first of these, 'Terramycin in the treatment of Bronchitis and Bronchiectasis', will be available shortly.

WHERE A BROAD-SPECTRUM ANTIBIOTIC IS INDICATED

Terramycin

PROVED CLINICAL EFFECTIVENESS
WIDE MARGIN OF SAFETY
COMPLETE RANGE OF DOSAGE FORMS

PFIZER PHARMACEUTICALS
Manufactured at Sandwich and processed at Folkestone, Kent

Pfizer

067/P

*Registered Trade Mark

**E

For home massage and relief of local rheumatic pain

Algesal is unique in containing *no counter-irritant*. It is suitable for repeated application by the patient at home, since it will not irritate or redden the skin.

The single, active ingredient is a non-irritating, skin-penetrating salicylate, carried in a soothing white vanishing cream with a pleasant smell of lavender.

INDICATIONS: Fibrositis or muscular rheumatism, osteoarthritis, backache due to lumbo-sacral strain, tenosynovitis, frozen shoulder and local tissue pain after injury or exercise.

★ Tear-off pads of leaflets describing a rational home treatment and simple exercises for osteoarthritis of the knee are available for handing to patients. Other leaflets dealing with lumbo-sacral strain and frozen shoulder are also available. Further leaflets are in preparation.

non-irritating, skin-penetrating anti-rheumatic salicylate balm

10% *Diethylamine Salicylate, in a soothing vanishing cream.*

Samples and full descriptive literature will be sent on request to the manufacturers

E.G.H. LABS

PERU STREET, SALFORD 3, LANCS.

Treatment of

DIABETES MELLITUS

without injections

Rastinon »Hoechst« tablets provide an oral treatment for certain diabetic patients.

EFFECTIVE A number of patients on small regular doses of insulin have been found to be suitable for treatment with Rastinon »Hoechst« tablets. Clinical work throughout the world has shown that approximately a quarter of all diabetics can be stabilized on Rastinon »Hoechst« tablets. A few of the more recent references to the literature are given opposite.

SAFE The selection and stabilization of diabetic patients should be carried out under strict medical supervision. For those patients found to be suitable, Rastinon »Hoechst« tablets provide a safe form of therapy and many have now been on oral treatment for two years. No cases of proven dyshaemopoiesis or other serious side-effects due to the drug have been reported.

SIMPLE From 2 to 4 tablets a day are normally all that is required to replace the insulin with its concomitant syringe, needles, swabs, and often nursing assistance as well. The normal regime of urine examination and dietary control remains necessary.

Packs: bottles of 100 and 500 tablets.

The basic price to the National Health Service as dispensed from a 500 tablet bottle is 2.97d per tablet and the total cost to the National Health Service, with all allowances, is less than 4d per tablet.

Each tablet contains 0.5 G. of N-Butyl-N¹-toluene-p-sulphonylurea; (Tolbutamide).

REFERENCES:

Clinical Experience with Tolbutamide, *Brit. Med. J.*, 1957, **2**, 323

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Dtsch. med. Wschr., 1957, **82**, 1513-1592 (Entire issue)

RASTINON

»HOECHST«

TABLETS

(TOLBUTAMIDE)

HOECHST PHARMACEUTICALS LIMITED · SLOUGH

Distributors in the United Kingdom

HORLICKS LIMITED · SLOUGH · BUCKS

no enema was necessary...

DULCOLAX, the new evacuant suppository, has recently been the subject of a trial in the wards of a geriatric unit.† In 155 cases of dyschezia normally receiving enemata, an excellent result was achieved in 131 cases, (84%) when one DULCOLAX suppository was given. Twelve cases (8%) required a second suppository, and the remaining twelve (8%) responded to a nocturnal aperient followed by a suppository the next morning. Thus, when DULCOLAX was employed, enemata were obviated in 100% of the cases treated.

DULCOLAX, the safe contact laxative, is available also as sugar-enteric coated tablets for oral administration.

†Brit. Med. J.: (1957), 2: 866

Dulcolax*

4,4' - diacetoxy - diphenyl - pyridyl - 2 - methane

Manufactured and distributed in the U.K. by Pfizer Ltd., Folkestone, Kent, for

C. H. Boehringer Sohn, Ingelheim am Rhein.

Registered Proprietors of the Trade Mark. **Regd. Trade Mark.*

025/B

A new molecular complex of

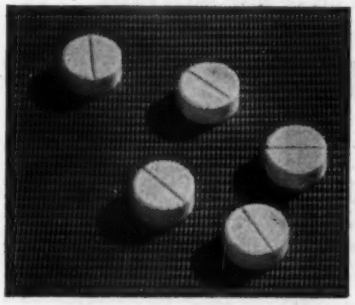
chloral hydrate in tablet form

WELLDORM (dichloralphenazone) tablets are a new molecular compound of chloral hydrate and the analgesic, phenazone. The former problems of taste, odour and gastric upset associated with chloral hydrate have now been overcome by the advent of WELLDORM. Prompt, safe and smooth, non-barbiturate WELLDORM tablets are ideal for those whose primary trouble is just getting to sleep. WELLDORM tablets initiate, then merge with natural physiological sleep.

There now opens up a vast new scope for the use of chloral hydrate—long considered one of the best hypnotics therapeutically.

Chloral hydrate, as contained in WELLDORM, is one of the safest of all sedatives. In therapeutic doses none of the vital functions is affected. Extensive clinical investigation has revealed no gastric side-effects when WELLDORM has been administered.

Clinical samples and literature will gladly be sent on request.



AVAILABILITY: *10 gr. scored tablets in containers of 25 and 250. Prescribable on Form E.C.10.*

Welldorm TABLETS

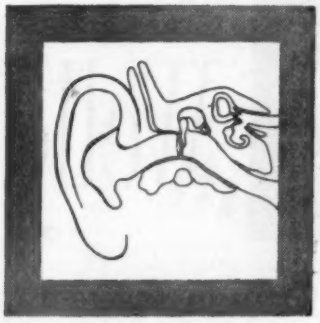
FOR SAFE SLEEP

S&N

SMITH & NEPHEW PHARMACEUTICALS LTD.
WELWYN GARDEN CITY, HERTS.

simpler, swifter, surer
treatment for ear infection

CHLOROMYCETIN* Ear Drops greatly reduce the time and effort necessary to treat suppurative otitis media, chronic otorrhoea, and infections of fenestration and mastoid operation cavities. Treatment can be conveniently carried out, if necessary in the patient's home, and is effective in a matter of days as compared with previous techniques requiring long and tedious application under close supervision.



CHLOROMYCETIN *Trade Mark

EAR DROPS 10%

(Chloromycetin 10% in propylene glycol) in 5 c.c. vials, with dropper, & bottles of 100 c.c.

Parke, Davis
& Company Limited (Inc. U.S.A.)
HOUNSLOW, MIDDLESEX
Telephone Hounslow 2361

382

In the treatment of migraine . . .

* **Femergin**

TABLETS
1 mg. Ergotamine Tartrate B.P.

AMPOULES
0.5 mg. Ergotamine Tartrate B.P./ml.

Cafergot

TABLETS
1 mg. Ergotamine Tartrate B.P.
100 mg. Caffeine B.P.

SUPPOSITORIES
2 mg. Ergotamine Tartrate B.P.
100 mg. Caffeine B.P.
0.25 mg. total alkaloids of belladonna
100 mg. isobutylallyl barbituric acid

Dihydroergotamine

SOLUTION
2 mg. dihydroergotamine methanesulphonate/ml.

AMPOULES
1 mg. dihydroergotamine methanesulphonate/ml.

"If ergotamine tartrate
by itself is not effective,
it may be more effective when combined
with caffeine, such as Cafergot tablets
(ergotamine tartrate 1 mg., caffeine 100 mg.)
or rectal suppositories . . .

If Cafergot tablets
and rectal suppositories are used
the initial dose should not exceed
2 tablets or 1 suppository,
and the total daily dose should not exceed
6 tablets or 2 suppositories.

Some patients develop nausea
and vomiting with ergotamine tartrate,
and the newer preparation
dihydroergotamine methanesulphonate (D.H.E.45)
is less liable to produce gastric upsets
but is not so generally effective . . ."

British Encyclopaedia of Medical Practice,
Interim Supplement No. 181 — October 1957, page 12

ALL BY **SANDOZ**

* The original Ergotamine Tartrate B.P.
(marketed outside the British Isles as Gynergen)

Sandoz Products Limited

Sandoz House
23 Great Castle Street
London, W.1

'RAUWILOID'

is essential for Hypertension

'Rauwiloid', a purified and standardised fraction of Rauwolfia serpentina alkaloids, can be considered a basic treatment for hypertension. It lowers blood pressure more effectively than phenobarbitone or its combinations with theobromine and is less likely to cause depression than reserpine.

IMPORTANT

'Rauwiloid' may require more than a week for a significant anti-hypertensive effect to develop. Any previous treatment, particularly barbiturate, should be gradually reduced over this period.

In Mild to Moderate Hypertension

In most cases 'Rauwiloid' will provide adequate control by itself. Combination therapy is not necessary.

In Moderate to Severe Hypertension

When a greater hypotensive effect is required, 'Rauwiloid' should be combined with veratrum in the form of 'Rauwiloid + Veriloid'. 'Veriloid' is a biologically standardised alkaloidal extract of Veratrum viride. Such a combination with 'Rauwiloid' enables adequate doses of veratrum to be given for a satisfactory hypotensive response. (See detailed literature).

In Severe or Malignant Hypertension

'Rauwiloid' used in conjunction with ganglionic blocking agents enables a smaller dose of the more potent medicament to be used, thereby minimising side-effects and decreasing the tendency for tolerance to develop.

'Rauwiloid' is available in 2 mg. tablets in bottles of 60 and 500.
Dosage, two tablets at night.

RIKER

'Rauwiloid' and 'Veriloid' are registered trade marks
Registered Users

RIKER LABORATORIES LIMITED
LOUGHBOROUGH, LEICS.

NEW!

'DISTAQUAINE' V-K

POTASSIUM PENICILLIN V

a chemically improved form of 'Distaquaine' V

* greater solubility * earlier peak blood levels * faster absorption
* higher therapeutic concentration

Each tablet contains the equivalent of 125 mg. penicillin V acid as potassium salt.

Foil pack of 12 and bottles of 100 and 500 tablets

Dosage: *One or more tablets, depending upon the severity of the infection, at four-hourly intervals.*

Note

CHANGE IN TABLET STRENGTHS

The British Pharmacopoeia 1958 will be published on March 3 and it is understood that the monograph on Phenoxymethylpenicillin (penicillin V) will state a dose range of 125 to 250 mg. For this reason we have reformulated 'Distaquaine' V 120 and 'Distaquaine V 240 tablets.

Retail pharmacists may dispense 'Distaquaine' V 125 and 250 tablets against prescriptions for the discontinued strengths when their stocks of the latter are exhausted. Similarly, until stocks of the new strengths are obtained, 'Distaquaine' V 120 and 240 may be supplied for prescriptions stating 'Distaquaine' V. 125 and 250. [M.O.H. statement, *Pharm. J.* (1958) **180**, 43]

'DISTAQUAINE' V 125
formerly 120
Each tablet contains 125 mg. penicillin V acid

'DISTAQUAINE' V 250
formerly 240
Each tablet contains 250 mg. penicillin V acid

'DISTAQUAINE' V 60
tablets remain unchanged in strength

Packs
'DISTAQUAINE' V 60
Bottles of 30, 200 and 1,000 tablets

'DISTAQUAINE' V 125
Foil pack of 12 and bottles of 100 and 500 tablets

'DISTAQUAINE' V 250
Foil pack of 12 and bottles of 100 and 500 tablets

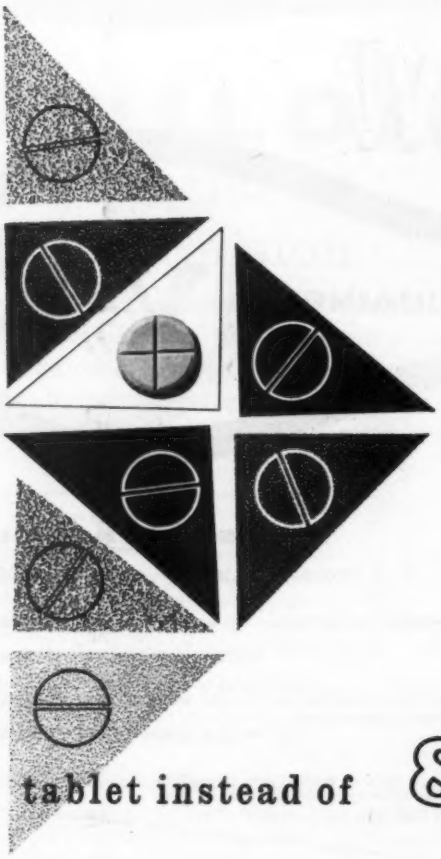
DC(B)L **THE DISTILLERS COMPANY (*Biochemicals*) LIMITED**

BROADWAY HOUSE, THE BROADWAY, WIMBLEDON, LONDON S.W.19 Tel: Liberty 6600

Owners of the trade mark 'DISTAQUAINE'

PPH6/58

a truly radical reduction in sulphonamide dosage



1 tablet instead of 8

The introduction of LEDERKYN Sulphamethoxypyridazine has radically changed the pattern of sulphonamide therapy. This is the first *long-acting* antibacterial sulphonamide to be offered for clinical use, and it is fully effective at a maintenance dosage of only ½ Gm. daily.

This is a reduction of some seven-eighths as compared with the typical sulpha drug dosage i.e. one tablet instead of eight. Improved tolerance and a welcome freedom from side effects result from this dramatic dosage reduction. Moreover, the swift absorption and efficient diffusion of LEDERKYN lend further emphasis to its clinical value—especially in treating genito-urinary infections.

Lederkyn*

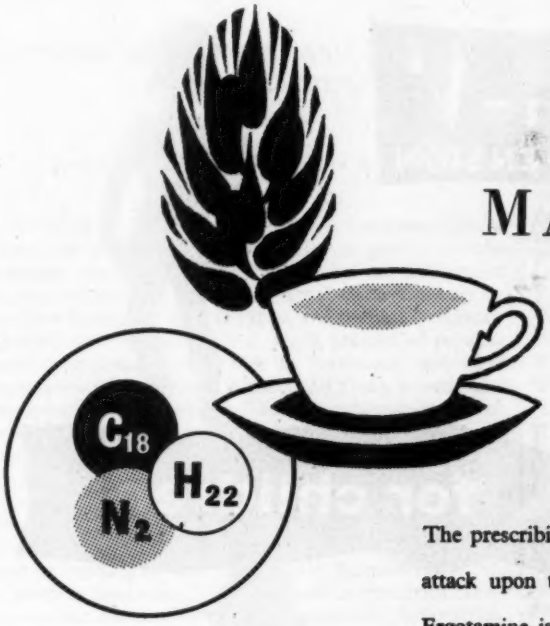
SULPHAMETHOXYPYRIDAZINE *REGD. TRADE MARK

Tablets (0.5 Gm.): bottles of 24, 100 and 500

Lederle

LEDERLE LABORATORIES DIVISION

Cyanamid OF GREAT BRITAIN LTD., London, W.C.2



today's new MASTER PLAN *against migraine*

Each tablet contains ergotamine tartrate 2 mgm.; caffeine (alkaloid) 100 mgm.; cyclizine hydrochloride 50 mgm. In bottles of 10 and 100

The prescribing of 'Migril' makes possible at last a *planned* attack upon the three predominant symptoms of migraine. Ergotamine is present at strength in 'Migril' for its specific effect upon the characteristic headache and ocular disturbances. Caffeine is present too, since it acts as a synergist to ergotamine. Frequently, however, ergotamine tends to evoke nausea and vomiting on its own account and can therefore worsen these aspects of the condition. For this reason, the potent, rapidly acting anti-emetic cyclizine is also included in 'Migril'—to overcome any tendency to nausea or vomiting, whether caused by the ergotamine or by the condition itself. And so successfully does cyclizine achieve this aim that truly effective oral doses of ergotamine can today be given—by means of 'Migril'.

'migril' TRADE MARK

BURROUGHS WELLCOME & CO., LONDON
(THE WELLCOME FOUNDATION LTD.)

Calcipen-V SUSPENSION

for children

of all ages

Calcipen-V Suspension is a palatable, *ready-prepared* suspension of calcium penicillin V, containing the equivalent of 60 mg. of penicillin V in each 5 ml. It is supplied in bottles of 60 ml. Calcipen-V is also supplied as tablets containing the equivalent of 60, 120 or 240 mg. of penicillin V. Professional sample and detailed literature gladly sent on request.

BOOTS PURE DRUG CO. LTD., NOTTINGHAM, ENGLAND

Boots

BETWEEN GUESSWORK AND CERTAINTY IN PSYCHIATRY *

AUBREY LEWIS
M.D. Adelaide, F.R.C.P.
PROFESSOR OF PSYCHIATRY, UNIVERSITY OF LONDON

(*concluded from p. 175*)

An effect of growing, but excessive, confidence in the power of psychiatric treatment is discernible in the changing attitude towards those who are delinquent or may become so. The recent Royal Commissioners on the Law relating to Mental Illness and Mental Deficiency assumed that doctors can tell which persons of psychopathic personality will benefit by treatment, and what treatment will be needed; consequently they recommend that compulsory powers to force a psychopathic patient into hospital should be used only when it is "clearly established" that he needs a particular form of treatment, which the hospital in question can provide; they recommend more extensive compulsory powers over adolescents and young adults who show psychopathic personality, because "it is generally agreed that treatment or training is most likely to be successful if it can be given at this stage". It may well be that both these assumptions about the benefits of treatment for psychopaths will turn out to be warranted: but as yet they rest on the certainties or the clinical impressions of those who took part in the treatment and on unchecked appraisal of the association between outcome and treatment. No controlled studies, of adequate size, have been carried out, and many of the difficulties which have so far precluded this were demonstrated in the investigation of a cognate problem—whether juvenile delinquents and "pre-delinquents" benefit from having a kindly older person to whom they can turn for friendship and guidance. Richard Cabot had supposed they would; an elaborate inquiry, with well-matched controls, was carried out to test his hope. This investigation had nothing to do with psychiatric treatment, nor were psychiatrists concerned in the analysis of its findings, but it afforded a model of honest, hypothesis-testing, longitudinal study of the effects of deliberate intervention. It exposed weaknesses in design and execution which can be foreseen now and guarded against; it demonstrated that social investigations concerned with human beings over a period of years cannot be carried out wholly according to plan, yet can be made to answer a correctly stated question; and it threw light on our ability to predict behaviour. Prognosis is more difficult in psychiatry than in other branches of medicine, as Kraepelin insisted: some psychiatrists, it is true, pride themselves on their gifts in this direction, but their complacency usually has weak foundations. Criminologists have been in the same boat.

In the Cambridge-Somerville study just referred to, three experts in criminology (one of them a psychiatrist) predicted what would be the later social adjustment of the 782 "difficult" or "pre-delinquent" boys, aged about 9 years, who were reviewed for the study; a similar prediction was made by the children's teachers; and it emerged that there was a correlation coefficient of 0·48 between the actual outcome on the one hand and the predictions both of the experts and of the teachers on the other. In other words, the predictions were above what would occur by chance, but experts in juvenile delinquency were no better at predicting what would happen to these children than were their school teachers. Moreover, both the teachers and the experts predicted more delinquency than actually occurred; so if there had been no "untreated" group for comparison they might have inferred—mistakenly—at the end of the investigation that the discrepancy between their predictions and the actual outcome was attributable to the benefits of the "counsellor" scheme of treament provided (Powers and Witmer 1951).

The most recent and sophisticated prediction study is Mannheim and Wilkins's inquiry into the effects of borstal training. Besides constructing prediction tables which they validated, they found it expedient, like others before them, to provide individual case-studies—i.e., to combine the clinical with the statistical method, in order to "demonstrate the variety of factors which, combined, may produce the same statistical score; to work out a typology of cases related to the various score classes; and to make a special study of atypical cases, i.e., cases who, in spite of favourable statistical scores, actually become failures, and vice versa". In their view the control technique, though in many ways indispensable, is insufficient as the only method of evaluating the diverse patterns and changes in the behaviour of individuals (Mannheim and Wilkins 1955). But Mannheim, in expressing this view apropos of the Cambridge-Somerville study, concluded that such investigations will have to be "in keeping with the experiences of experimental social science rather than those of medicine" (Mannheim 1953).

This seems an innocuous conclusion. But it contains the chief elements of a vital controversy. Psychiatry is, like criminology, a form of applied social science: it is also a branch of medicine. If there is an intrinsic opposition or sharp difference, as Mannheim implies, between the methods appropriate to study of social experiments and those of medicine, psychiatry will be pulled hither and thither, in a bewildering zigzag. I do not believe there is such an opposition; but the literature might suggest it—and the progress of psychiatry does look a little indecisive and wobbly at times. The problem is to be found in the uniqueness, the singularity of each individual.

In the practice of psychiatry, attention must be concentrated on the individual. Because he is unique and extremely complicated, he does not seem wholly catchable within a scientific net. The succession of events which pertain to the medical, as to the social or psychological, course of an individual's life can, it is true, be predicted to some extent, and designedly influenced, by applying general principles to the historical and observational data we have about him: but there is still something over; consequently intuitive processes often play a large part in determining the physician's prognosis and treatment—especially in psychiatry. The doctor's procedure may hardly include at all the strict deductive application of a general theory to a particular, narrowly stated case, and it differs manifestly from that of the experimental biologist who does his utmost to get rid of uniqueness in his experimental animals. This difference applies to the practice of psychiatry. But it does not apply to the psychiatric investigator who must concern himself with what is common to

* The Bradshaw lecture for 1957, delivered before the Royal College of Physicians on Nov. 7.

human beings, or to classes and subgroups of human beings.

* * *

The controversy is not between medicine and the social sciences, or between medicine and the biological sciences, but between two schools of thought within the social sciences. Their debate has enlisted some notable disputants. There is guerilla warfare between the adherents of the " nomothetic " school, which seeks general laws and employs the procedures of the exact sciences, and the " idiographic " school, which endeavours to understand some particular event. Both approaches, as Gordon Allport has urged, have value in studying personality. But the proportion of idiographic to nomothetic study can be excessive: and there can be little question that this has been the case in psychiatry. Hence its weakness on the very ground where idiographic study should be most potent—the understanding of individuals to such a degree that their behaviour can be predicted.

Meehl, in a thoughtful monograph on this matter, collected all the published instances in which predictions arrived at by the skilled judgment of a clinician were compared, as to their correctness, with those arrived at mechanically by someone who had not seen the patients but who made appropriate calculations. In all but one of the twenty studies examined, the acturial or cookery-book approach yielded results as good as those of the clinician, or better (Meehl 1954). It would be imprudent to draw from this the conclusion that clinical prognosis is a superfluous exercise, and that prediction had better be handed over to the clerks and computors: impartial judges like Vernon have pointed out that the clinical method—and in particular the clinical interview—has advantages which the actuarial method, based on psychological tests and biographical items, does not possess.

Informative as the idiographic approach has proved, and fertile as it will doubtless continue to be, it contains no built-in safeguard against persistent error. Such safeguards are essential; for, as Karl Popper puts it, " if scientific objectivity were founded . . . upon the individual scientist's impartiality or objectivity, then we should have to say goodbye to it ". Yet the safeguards contained in the scientific method are repugnant to some who devote themselves to psychotherapy, and their argument against it always harks back to the uniqueness of the individual. Thus C. G. Jung declares that :

" from matters of individual psychology science ought, in fact, to withdraw. For, to speak of a science of individual psychology is already a contradiction in terms. It is only the collective element in the psychology of an individual that constitutes an object for science; for the individual is by definition a unique reality that cannot be compared with anything else."

This is an obscurantist argument. Because an individual is a unique reality, it by no means follows that he cannot be compared with anything else: every individual plant, every individual animal is a unique reality but not therefore exempt from comparison and collective study. The argument is a reversion to the claim, so often voiced during the controversies about Evolution, that man is, by his nature, fundamentally distinct from all other creatures and an improper subject for comparative study. The opponents of the evolutionary theory refused to consider what human beings have in common with other living creatures: the argument put forward by Jung ignores what human beings have in common with each other. Psychology has in fact concerned itself with individual differences, and has had notable success. It may be that the difficulty is verbal, and that Jung means by the psychology of an individual the study of just that which is the essence of each person's total personality, something that would be shattered by analysis and resolution. I doubt, however, if his statement is merely a truism, as this explanation would suppose.

The dispute has many facets. For some, it can become a theological issue. For others, the distinction is between the generalising sciences and the historical sciences. Popper, whose analysis has been so searching, put forward the view that whereas the generalising sciences are interested in testing universal hypotheses having the character of natural laws, and in predicting specific events, the historical sciences are concerned in explaining past specific events by means of interpretations and specific hypothetical statements about " causes". This view, which is in keeping with Max Weber's, would put clinical psychiatry in the historical class, in so far as it is directed at understanding morbid behaviour, trying to uncover what Jaspers in his elaborate exploration of the matter called " verständliche Zusammenhänge ". It would be improper to put all psychiatry in this class, and I would not have laboured this issue if it were not again evident at the present time that there is a strong move away from the search for general laws, and towards preoccupation with the individual. Thus Manfred Bleuler, one of the most prominent of European psychiatrists, declared recently that the most essential feature in the recent development of psychiatry has been that the diagnosis of disease has given place to absorption in the personal tragedy of individuals: " das Hauptaugenmerk richtet sich auf Einzelschicksale " (Bleuler 1957). The effect of this movement will, I submit, be retrograde.

* * *

I have dwelt so far on prognosis and treatment. There is another extensive but rather neglected territory in which few psychiatrists tread a confident path—the alleviation of chronic disorders, and especially chronic schizophrenia. The word " chronic " has got a bad name, and many think they can dodge its terrors by submitting " long-stay " for it. But changing names has always proved a futile game in psychiatry, and the chronic patients, whatever the euphemism applied to them, remain a vast reproach. The Chairman of the Board of Control lately reminded us that the number of chronic patients in England and Wales has remained fairly constant throughout the years, at about 130,000; 85% of the patients in the mental hospitals have been there for more than a year, and 60,000, (i.e., two-fifths of the whole mental hospital population) have been there more than ten years; 50,000 of these patients suffer from schizophrenia (Armer 1957). Considered in relation to the general population, there are for every 100,000 people over 16 in England and Wales, 270 in a mental hospital suffering from schizophrenia, mostly in a chronic form. It is painfully clear that chronic schizophrenia is an outstanding medical and social issue.

Some therapeutic zealots believe that if appropriate treatment, especially insulin-coma treatment, had been administered early to these patients, many of them would not have become chronically ill. For this belief there is no adequate foundation. We must, unfortunately, reckon with the continuance, for decades at least, of this vast company of more or less incapacitated schizophrenics.

It is, however, necessary to distinguish between being chronically ill with schizophrenia and having therefore to be in a mental hospital. The attitudes of doctors and of

society at large determine whether a person with a long-continued mental illness lives in a mental hospital or in the community. The practice of some countries has been towards increasing mental-hospital care, and of others towards keeping it at a minimum. Many communities have been readier to build and equip medical institutions —hospitals as we know them—than to provide hospitals in the older sense—asylums for the infirm and the indigent —and homes in which the patients could find friendly shelter, as at Gheel.

We are now entering a phase in which we shall be directing our efforts towards keeping patients in the community as long as possible, and if they have to come into hospital, towards returning them to the community quickly. The reasons for this are mixed—awareness of the deleterious effects a mental-hospital environment can have however well ordered it may be and aptly designed for the patients' benefit; regard for favourable social influences which independent life in the community affords, even to the mental cripple; economic advantages for the patient, the taxpayer, and the nation; shortage of nurses; and perhaps some changes in the social ethos. The recent Royal Commission expressed this trend of opinion, in its broadest form, in their recommendation—" there should be a general re-orientation away from institutional care in its present form and towards community care ".

This is a hopeful change from that overcautious policy which regarded the mentally ill, especially the chronic schizophrenic, as debarred from society so long as delusions, hallucinations, or peculiarities of conduct were discoverable. But the new policy—I call it new but it was advocated as long ago as 1905—could go to extremes and do much harm. It could also lose its impetus and purpose. Reforms that rest on humanitarian impulse have been most powerful for good, especially in psychiatry, but their momentum has often been lost or their drawbacks been perpetuated when the generation of reformers passed away. The chief safeguard against this recurrent backsliding lies in the accumulation of more precise knowledge, permitting generous aims and lofty principles to be translated into regular procedures that will be applicable even when the reformer's driving force has slackened and gone.

* * *

How much do we know about the issues touching on community care for the chronic schizophrenic? As yet little. Shrewd empiricism and clinical intuition provided, so it was thought, all that we needed for the rehabilitation of the chronic psychotic. There have been preliminary sketches but no finished pictures of the effect of hospital environment upon such patients: few studies of how the patients may be selected, and how prepared, for satisfactory life in the larger community: and only tentative cartoons and inadequate blueprints of the domestic, social, and occupational conditions requisite if they are to keep their heads above water when they have left the mental hospital.

It has long been a commonplace of psychiatric thinking that for many patients there is a critical stage in their mental-hospital stay: if the turning-point is not recognised and the patient then discharged, he will subsequently react to his hospital life and surroundings by becoming worse and the chances of his ever leaving will be very small. What truth there is in this, how the favourable phase is to be recognised, what characteristics of the hospital regime need to be altered to make adverse effects less—regarding these questions there is much guesswork, sometimes ill-assorted with a feeling of certainty " on the strength of my thirty years experience, I am absolutely convinced that . . ." A French psychiatrist, P. C. Racamier, wrote a few months ago that there is no creature in the world more sensitive and vulnerable to his human environment than a schizophrenic, and that a psychiatric ward is a two-edged weapon, potentially therapeutic and potentially " le plus remarquable instrument d'aliénation qu'on puisse imaginer . . . surtout pour ces aliénés achevés que sont les schizophrènes ". He states the general proposition that autistic isolation is the only stable relation which a schizophrenic can establish with another person, and declares that it is a " law of sociopathology " that the hospital milieu tends to maintain this morbid stability. (" Le milieu hospitalier, l'hôpital tout entier, a tendance à maintenir le status quo stable acquis au prix de la chronicité des malades.") A generalisation such as this, derived from a psychoanalyst's experience as doctor in a mental hospital having no unlocked wards, goes much too far, but it suggests some provocative hypotheses.

To state hypotheses and devise suitable experiments in this field of inquiry is a formidable business, as we and others have found. Social experiments in hospitals will seriously effect the daily care and the disposal of patients, put a strain on the attitudes and sense of security of nurses, and perhaps run counter to cherished clinical beliefs. Only those who would not have to carry out such experiments could be disposed to throw stones at doctors, sociologists, and psychologists for not having accomplished the feat yet.

In the investigations which the Social Psychiatry Research Unit has been carrying out, we have found it necessary at each stage to pass backwards and forwards from laboratory to ward and from ward to laboratory, and to pass from both to the outer world where relatives live and conditions of work and daily life may make or mar the chronic schizophrenic's chance of staying outside hospital for good.

First, there was the inescapable problem of ascertaining the patients to be studied, and then matching one group of them with another. Since there may not be agreement as to which patients are properly diagnosed as schizophrenic, some unambiguous and communicable criteria must be used. Psychologists have applied factorial analysis to rating scales of behaviour, and so worked out diagnostic patterns which can be applied uniformly; the use of these minimised the risk that others who replicate the experiments might obtain discrepant results only because their criteria of paranoid and catatonic schizophrenia differed from ours.

When the patients had been selected—they were men who had been in hospital for years—their mental state and their potentialities for life outside the hospital had to be assessed. Clinical data had to be reinforced by observations on the capacity of the patients to learn and to improve their performance at industrial tasks. The reaction-time of schizophrenics, and the effect of distractions and other extraneous stimuli such as noise had to be determined. Differences were found between paranoid and other schizophrenics which made further laboratory experiments necessary. The effect of incentives had likewise to be investigated under laboratory conditions.

Then there were the chronic patients who had left hospital and managed to stay in the ordinary community. For them methods of investigation and statistical analysis were needed akin to those used for prediction work in criminology. A close study of the family relationships of the schizophrenics and of the community's attitudes to mental illness was called for. Such study is best pursued by the combined work of the anthropologist, the psychiatrist, and the social psychologist.

The available techniques and theoretical models are not entirely adequate: recent work has shown that the methodological problems are still acute. It has been necessary from time to time to leave the more practical problems set by clinical observation and therapeutic intention, and to pursue issues of a more general nature, such as the learning curve of the chronic schizophrenic patients, or the methods of measuring change in mental state over a period of time.

The history of these investigations is an object-lesson in reciprocity—reciprocity between fundamental and applied studies, between clinician and social scientist, between laboratory and ward.

* * *

I have dwelt perhaps too much on the psychological and social side of the picture. Psychiatry is not just applied sociology and applied psychology. It has its roots deep in medicine, and most of its surest knowledge derives from the bedside and from physiology, pathology, genetics, and biochemistry. It has methods of treatment which are of the same stock as those which have proved themselves in other branches of medicine. Its only assured methods of prevention concern mental diseases and defects due to known organic causes. It is moreover a practical activity, instinct with humane intention: the psychiatrist cannot refuse to act in what he judges to be the most helpful way for his patient, even though the therapeutic procedure is empirical and its benefits still dubious. Only a detached spectator, god-like above the battle, could expect the psychiatrist to refrain from giving some form of psychological treatment to patients with distressful anxiety or conspicuous hysteria, though he cannot be certain that it will have effect. There are some awful warnings of what a craving for certainty can lead to. You may remember the philosopher Cratylus who, as Aristotle tells us, decided never to say anything but what was certainly true, and so he ceased to talk at all and confined himself to wagging his finger.

Psychiatry suffers much from hopeful illusions and clichés used as incantations, just as a few decades ago it suffered, even more, from pessimistic and resigned inertia. Bleuler's monograph on autistic thinking in medicine is a sustained diatribe against the former of these extremes (Bleuler 1927): Adolf Meyer inveighed against the latter of them. Into the stagnant bog of nihilism in treatment we are hardly likely to fall again soon, but we are not out of the other danger.

It is easy to lay failings like these at the door of psychiatrists, blaming their lack of scientific training, their loose habits of thought, their incuriosity, their passion for psychoanalysis or for physical methods of treatment, their preoccupation with the fascinating art of understanding other people. To think this seems to me facile and unjust. More important than the deficiencies of doctors are the inherent complexity of the problems, and, as I said at the outset, the fact that the solution of many of the most complex and important depends upon the social sciences, which are still immature. Their growth has been rapid, it is true; psychology in particular has moved from strength to strength: but they have not crossed some of the awkward hills and ditches that lie in their path and in the psychiatrist's.

One of the most distinguished of living sociologists has said that sociology has few formulæ, in the sense of highly abbreviated symbolic expressions of relationships between sociological variables. Sociological interpretations therefore come to be highly discursive, "the logic of procedure, the key concepts, and the relationship between variables not uncommonly become lost in an avalanche of words". The sociological analysis of qualitative data does not reside, as some people assume, in a private world "inhabited by penetrating but unfathomable insights. . . The procedure of even the most perceptive of sociologists must be standardizable and the results of their insights testable by others. Science, and this includes sociological science, is public and not private." These words of Robert Merton have a familiar ring. The study of human behaviour strongly invites private and discursive interpretations: the development of the social sciences, pure and applied, has been a struggle to resist the invitation. Psychiatry has made one gigantic effort to escape it, but hardly succeeded: psychoanalysis, for all its stimulus and scope, has remained rather private and rather discursive.

I have not enlarged on the attainments of psychiatry, its solid groundwork of detailed, minute, and orderly observations, its empirical successes, its accretions through application of the basic medical sciences to clinical problems. There are large textbooks and innumerable monographs, compilations, and symposia setting forth this stock of knowledge which stands to the credit of psychiatry. It is because of it that the psychiatrist, even the self-critical psychiatrist, feels no need to beat his breast and recite penitential psalms when he meets other doctors. There are however occasions, such as this lecture offers, when a review of important areas of ignorance and doubt, and of the reasons for them, seems appropriate.

Clearly we are a long way from certainty, and when we meet anyone who is sure that he knows how to tackle the problems of mental disorder and to remedy the failings of psychiatrists and psychologists, we may recall Lord Lansdowne's remark: "I wish I could be as sure of anything as Tom Macaulay is of everything." Guessing, too, has its perils and its ardours: it takes unkindly to the discipline which is good for it. Yet between those who are nearly certain and those who guess much there is the bond which Isaac Newton spoke of: "I doubt not we have one common design: a sincere endeavour after knowledge, without valuing uncertain speculations for their subtleties, or despising certainties for their plainness."

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ATHEROSCLEROSIS AND ITS CEREBRAL COMPLICATIONS IN THE SOUTH AFRICAN BANTU

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THE high prevalence of coronary-artery disease in more developed communities has focused attention on the causative factors. One factor thought to be important is atherosclerosis and hence the interest in the "widespread clinical belief that the more severe complications of atherosclerosis such as cerebral and coronary thrombosis . . . are rare among the Bantu" (Higginson and Pepler 1954). This view is supported by Becker (1946), who, in 3000 necropsies on Bantu, held atheroma to have been the direct cause of death in only 0·4%; this is almost the same as Edington's (1954) finding in a survey of necropsies in West African Bantu. Again, Humphries (1957) says that in fourteen years' work among natives of South, Central, and West Africa he saw few instances of paralysis due to cerebral hæmorrhage.

But Becker (1946) did find atherosclerosis to be common (though not as cause of death) and this seems to have been overlooked. For current teaching (e.g., *South African Medical Journal* 1957) mentions the "Bantu's relative freedom from atherosclerosis"; and Bersohn (1955) is quoted as saying that the aorta of the aged Bantu is comparable with that of a young European. Further, according to the Department of Nutrition of South Africa (1956), "heart and arterial disease are very rare among the Bantu". We cannot agree with these views; from our findings in this hospital we consider the true state of affairs in the Bantu to be:

(1) Aortic atherosclerosis is common.
(2) Cerebral vascular disease is relatively common.

Findings

Necropsy Evidence of Atherosclerosis in the Aorta of the Bantu

The serious effects of atherosclerosis are seen in the brain (thrombosis and hæmorrhage) and in the heart (coronary-artery disease).

The findings in table I are drawn from 300 consecutive necropsies in Bantu, over the age of 19, who died in this hospital. We have excluded all cases of syphilis or diabetes. Necropsies were done (all by one of us) on two-thirds of patients dying in this hospital, which compares well with Higginson and Pepler's (1954) necropsy-rate of 33%. Our patients were Bantu from the poorer classes of the midlands of Natal; only 15% came from a city. Most live in tribes in rural conditions.

Table I shows naked-eye estimates of the degree and extent of atherosclerosis found in the aorta, assessed by a modified form of the grading suggested by Wanscher et al. (1951):

Clear = no naked-eye evidence of atheroma.
Grade 1 = slight fatty streaking with minimal involvement.
Grade 2 = a more obvious atherosclerosis, with plaques tending to be confluent but without obvious ulceration.
Grade 3 = severe atherosclerosis including early ulceration.
Grade 4 = severe atherosclerosis with ulceration, calcification, and gross scarring.

Table I shows that the prevalence of atherosclerosis was significant, even in the younger age-groups, and that its degree and extent increased steadily with increasing age; in the oldest age-groups no-one was found free.

TABLE I—PREVALENCE OF AORTIC ATHEROSCLEROSIS IN THE BANTU

Age-group	Sex	Clear (%)	Stage 1 (%)	Stage 2 (%)	Stage 3 (%)	Stage 4 (%)	No. of patients	Total
20–29	M	26	35	26	4	9	23	41
	F	28	50	22	..	..	18	
30–39	M	25	46	8	4	17	24	58
	F	32	32	30	..	6	34	
40–49	M	19	25	33	17	6	36	56
	F	15	25	30	30	..	20	
50–59	M	14	41	21	8	16	37	56
	F	5	16	11	52	16	19	
60–69	M	..	18	27	30	25	40	59
	F	..	11	21	31	37	19	
70 and over	M	..	..	53	29	18	17	30
	F	..	..	..	77	23	13	
No. of patients		44	80	73	56	47	..	300

Cerebral Complications of Atherosclerosis in the Bantu

In 2000 consecutive necropsies in Bantu patients, cerebral hæmorrhage or thrombosis was found in 31, when cases of syphilis and diabetes mellitus were excluded. 5 of these 31 necropsies were limited. There were 4 men and 13 women with hæmorrhage, and 6 men and 8 women with thrombosis. The high proportion of women is noteworthy, since more men than women are admitted to the hospital.

Fishberg (1934) points out that cerebral hæmorrhage is by no means rare in patients without hypertension, but there is general agreement that the tendency to cerebral hæmorrhage seems to be greater the higher the blood-pressure. Table II shows the number with hypertension in the 31 cases. Hypertension was diagnosed when a blood-pressure of over 145/90 mm. Hg had been recorded (Wood 1952).

In the 18 hypertensive patients, the pressures were :

Diastolic pressure	*Men*	*Women*
90–110 (mild)	1	4
111–130 (moderate)	1	3
131–150 (severe)	2	4
Over 150 (gross)	..	3
Total	4	14

Table II shows that up to the age of 55 there is no sex difference in the incidence of cerebral catastrophes with or without accompanying hypertension. Thereafter, however, the women are more prone to cerebral vascular disease with and without hypertension. This sex difference is the reverse of the findings in all more advanced communities (Loder 1953).

Atherosclerosis was present in all but 1 of the 26 patients in whom a full necropsy was done; with the classification of Wanscher et al. (1951), 14 had atherosclerosis of grade 3 or 4, 8 had grade 2, and 3 had grade 1. In half the necropsies, atherosclerosis of the cerebral vessels was gross.

In 3000 consecutive necropsies in Bantu in South Africa, Becker (1946) found only 1 cerebral catastrophe, whereas in just under 2000 consecutive necropsies we have found 31 such patients—a prevalence almost fifty times greater than that in Becker's series. Further, in our series the percentage with cerebral vascular disease found by us in necropsies in Bantu medical patients is as high as that reported at St. Bartholomew's Hospital, London—namely, 3·5% (Wilson 1944).

Discussion

Aortic Atherosclerosis

There are few satisfactory records with which to compare our findings.

TABLE II—INCIDENCE OF HYPERTENSION IN THE 31 PATIENTS

Age-group	Total	No. with hypertension	Men	No. with hypertension	Women	No. with hypertension
35–44	8	5	3	1	5	4
45–54	6	3	4	2	2	1
55–64	9	5	3	1	6	4
65 and over	8	5	..	..	8	5
Totals	31	18	10	4	21	14

Becker (1946), in 3000 necropsies, recorded a high prevalence of aortic atheroma in the older age-groups—e.g., 74% in patients over 60, and 56% in patients over 45. He analysed the severity of the lesions in the over-45 group and our findings are set out for comparison: our grades 1 and 2 are equivalent to his mild, our grade 3 to his moderate, and our grade 4 to his severe.

Degree of atheroma	*Mild*	*Moderate*	*Severe*
Becker's series	58%	16%	26%
Present series	50%	28%	22%

In Becker's series the youngest patient with ulcerative atherosclerosis of the aorta was aged 30; our youngest patient with this degree of disease was 27. Another of our patients aged 45, had had a leg amputated for gross stenosing atheroma of the mouth of the right common iliac artery.

Becker found severe atherosclerosis in 26% of the patients aged over 45, but only in 0·4% of the whole series was atherosclerosis a cause of death. Although the figure of 0·4% is drawn from patients over and under 45, there remains a significant discrepancy between his two figures which we cannot explain. There was no such discrepancy in our series.

It seems that our figures for the prevalence of aortic atherosclerosis agree fairly closely with those of Becker who says that " in Bantu . . . subjects the incidence of atheroma of the aorta in the ascending period of life (up to age 45 years) is not far removed from that in other races, and that the incidence of the senescent type may be only slightly less."

Cerebral Vascular Disease

We have already given details of the prevalence of cerebral vascular lesions at necropsy. For comparison of findings in Bantu with findings in South African Europeans, it is essential to consider also those Bantu patients in whom it appeared reasonable to assume a vascular catastrophe but who did not come to necropsy or who did not die. In this second group, every effort has been made to exclude other diseases capable of causing hemiplegia, and we have excluded all patients with syphilis or diabetes or with abnormalities of the cerebrospinal fluid (except blood). In addition, in an attempt to exclude rupture of a congenital aneurysm, we have excluded all patients below the age of 50. It is conceivable that our criteria have been made over-severe.

Within the above limits we found another 37 patients (in 5700 medical admissions) who almost certainly had cerebral catastrophes from atherosclerosis (table III).

In the 21 hypertensive patients, the pressures were:

Diastolic pressure (mm. Hg)	*Men*	*Women*
90–110	3	2
111–130	4	7
131–150	1	1
Over 150	..	3
Total	8	13

The combined figures give a grand total of 68 patients admitted for cerebral vascular catastrophes; when correction is made for the limiting age-groups this figure represents 1·5% of all adult medical admissions at risk. This is two-thirds of the prevalence of cerebral vascular lesions found in patients admitted to Pietermaritzburg European Hospital (L. Fernley, personal communication). But it is probably much below the true prevalence.

South Africa is a country of great distances, and no death certificate is required for Bantu dying of natural causes; the patients with cerebral vascular catastrophes who reach hospital represent only that small proportion who are within easy reach of medical help. At present there is no method of assessing the numbers who develop hemiplegia and who are buried without record. Patients usually come to hospital by bus; this is harder for the paralysed than for other patients.

TABLE III—CEREBRAL CATASTROPHES IN PATIENTS AGED OVER 50 (EXCLUDING 31 NECROPSY PATIENTS)

Age-group	Total	No. with hypertension	Men	No. with hypertension	Women	No. with hypertension
50–54	8	8	6	6	2	2
55–64	9	4	4	..	5	4
Over 64	20	9	8	2	12	7
Totals	37	21	18	8	19	13

From our findings and those of Becker (1946), we think there is enough evidence to refute the view that the Bantu enjoy any relative freedom from atherosclerosis or from its cerebral complications. One interesting finding which needs consideration is the high prevalence of atherosclerosis and its cerebral complications in Bantu women —contrary to the findings in people of European descent (*British Medical Journal* 1955).

Summary

The prevalence of atherosclerosis of the aorta in necropsy examinations in 300 adult South African Bantu shows that aortic atherosclerosis is relatively common in this race. 31 patients were found at necropsy to have cerebral hæmorrhage or thrombosis. Out of 5700 medical admissions, there were 37 patients in whom the same diagnosis was made but who did not come to necropsy.

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THE DOCTOR'S ATTITUDE TO HIS PATIENT

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Homo sum; humani nil a me alienum puto.—*Terence.*

As soon as we have left the haven of medical school and textbooks and entered practice, we learn to our bewilderment that there is more in treatment than drugs, diets, and surgery. Some patients will not improve with correct treatment, others will get better on the wrong treatment; some come to us with deep gratitude when we know we have done nothing for them, while others are full of resentment though we have spent much effort and sympathy. Such imponderables as the patient's expectations and fears, the doctor's approach and attitude, and the manner of examination not only influence but often outweigh the conventional treatments indeed, as Balint (1957) has shown.

The doctor's personality (or " bedside manner ") is accepted as playing a part in treatment, but is usually thought to be incidental, outside the scope of scientific inquiry.

Yet people choose or reject a doctor less for his erudition (which they can hardly judge) than for his " personality ", for that peculiar set of qualities that apparently make medicine an art. Patients and doctors alike, for successful treatment, somehow have to suit each other. If the doctor's personality and attitudes play a part in medical treatment, then they must be worthy of investigation and evaluation. Here I propose to do this, using an illustrative case.

The Case

Since in published case-histories the doctor rarely appears at all as a person, I had perforce to choose one of my own cases for this study.

I decided to take the first patient I would meet on a certain pre-selected Sunday morning. (I chose a Sunday because I hoped that I would not have to work under as much pressure as on a weekday.)

Early on that Sunday morning the father of a five-year-old girl telephoned me. He said that his little girl had had severe pains in her abdomen since the day before ; she had vomited and seemed feverish. I advised him to apply a hot-water bottle to the child's abdomen, and promised to call.

I did not go immediately, but decided to shave, dress, and breakfast before visiting the girl so that I could combine my visit to her with my other visits, without having to go home again. I saw the patient about an hour later. The parents, especially the mother, were very distressed ; they feared that the child had acute appendicitis. After examining the child, I told them that I could make no firm diagnosis, and that we could either send the child to hospital, or ask a pædiatrician for a domiciliary consultation. The mother wanted the child to go to hospital immediately, in case an operation were necessary. The child, however, who had listened to the conversation, and who had been in hospital a few weeks before for tonsillectomy, was very distressed at the thought.

In the end, we all agreed to call in the pædiatrician. He came, examined the child with me, diagnosed pneumonia and pleurisy, and suggested antibiotic treatment at home. I gave the child her first penicillin injection, some nursing instructions to the parents, and that completed the treatment for the day. The child eventually recovered and is now quite well.

There had been previous contacts between patient and doctor. The family had moved into the district about six months previously, and become my patients. Their former doctor had advised tonsillectomy, and the child had been placed on a waiting-list. The mother was worried about the child losing her place on the list because the hospital was too far away for her to be taken there. I agreed, after examination of the child, that tonsillectomy was advisable, and was able to arrange it soon in our local hospital. The mother was very grateful for the speed with which arrangements were made.

In this background certain patterns of behaviour had been experienced by everyone concerned, and all had formed certain mental pictures of each other. The mother had seen the doctor fall in with her wishes for treatment of the child, and that he was an obliging man, susceptible to her manifest gratitude. The father, a weak figure, had seen that the doctor complied with his wife's demands. The child had learned that everybody, including the doctor, did what mother wanted. The doctor was pleased, having given satisfaction all round, and acquired a set of " good " (appreciative) patients.

The Patient-group

Although the sick child was the patient to whom the doctor was called, the parents were also involved. They were affected by distressing emotions and had to be dealt with by the doctor therapeutically. Indeed, our case-report would be incomprehensible if it dealt solely with the relationship between the doctor and the child.

Generally, the " patient " is in fact a group of people who are all, in varying measures, affected by the central illness. The peripheral members of the patient-group show mixed somatic and emotional reactions, commonly anxiety, or guilt, or fear of having a similar disease. These reactions both affect the central patient and indicate the need of the peripheral members for treatment by the doctor. To understand and deal with the varied and sometimes opposing needs of the members of the patient-group demands much flexibility.

A few years before the National Health Service, I was called to a child suffering from simple upper respiratory catarrh. To save the working-class mother a further fee, I said that there was no need for me to call again. Some years later I happened to meet the child's grandmother and, remembering that I had not seen the child or the mother for a long time, I inquired after them. The grandmother told me that they had another doctor now, for the mother had felt that by not offering to call again I had not shown enough concern. The child had completely recovered two days after my visit. Obviously, although my treatment of the child had been successful, my treatment of the mother had been clumsy and unsuccessful.

In our present case, had I sent the child straightway to hospital with a bold diagnosis of " (?) acute appendicitis ", the child would have been very unhappy, though the mother's distress would have been relieved. The father would have remained in his ambivalent discomfort of wanting his little girl at home, yet not wanting to contradict his wife. Had I, on the other hand, merely prescribed some appropriate drug and promised to return later in the day, the child would have improved, yet my action would probably have left the mother in a state of doubt and anxiety.

The Immediate Treatment

Our case began with a telephone call, in response to which the doctor advised the application of a hot-water bottle. This simple prescription constitutes the first therapeutic step, the success or failure of which may leave a lasting impression and affect the later steps. It is important, therefore, to examine this advice in more detail.

Looking back on the occasion, I remember that the advice was given almost automatically, as if under the pressure of a feeling that something must be done at once in this case. The manifest purpose of the advice was to relieve the child's pain and to reassure the parents. Whether such immediate action and the advice given were best for the child and the parents is a question which can only be answered by scientific argument, and there are undoubtedly as many reasons against as for it. The first treatment decision did not arise out of conscious logical reasoning: it must have been derived from unconscious sources, determined by the personal experiences and attitudes of the doctor, his personality—exactly those qualities that we set out to study.

The doctor showed the same willingness to oblige in the present situation as in his management of the mother's demand for the child's tonsillectomy. He accepted without argument the necessity of visiting the sick child, sensed that the parents were very anxious, and himself became concerned about the child. To continue to be obliging he ought to have visited the child immediately ; but he gave himself some very good reasons why he should not. We can see here two conflicting urges: the wish and the disinclination to go immediately.

We might say that the brief telephone conversation about the sick child aroused three major emotions in the doctor.

There was concern about the child, a feeling that, unless something were done, there might be unpleasant consequences —perhaps the child getting worse, or the doctor losing his reputation or the family as patients—in short, *anxiety*.

There was also a dislike of the visit, a hesitation to go immediately, perhaps a feeling that people ought not to bother him so early—or, in terms of basic affects, *hostility*.

Thirdly, there arose the affect of *guilt*, which made him feel that he ought to make up for his not going immediately. He did so by giving the snap advice.

Objectively, there was little cause for anxiety about the child, or for feeling guilty about not going at once. She had been ill for some sixteen hours, and another hour or two would scarcely

make much difference. One may therefore conclude that the anxiety, hostility, and guilt already existed within the doctor, and were waiting only for a particular confluence of events to stir them up; apparently the father's story had all the elements of such a confluence.

When, afterwards, I thought about the powerful urge for immediate action, I remembered that in my childhood I had had attacks of abdominal pain, supposed to be caused by "wind," which were relieved by the application of heat. They frightened me very much. I feared that I might die in one, and that the pain and threat of death were punishment for my misdeeds (mainly truancy from scripture lessons and forbidden sexual fantasies). The father's story struck a chord within me and, though the memories of my own childhood suffering were not then brought into consciousness, some of the affects bound up with them—namely, anxiety and guilt—were re-experienced. They gave the impetus to my urge for immediate action, and were the driving force behind the swift, almost automatic advice.

Transfer of Emotions

Is this merely an anecdotal incident in a doctor's life? Or is our particular doctor perhaps always driven by such emotional urges and conflicting wishes? Or are more fundamental principles involved?

These affects (anxiety, hostility, and guilt) are not particular to our case or even to our doctor. The patient always becomes dependent on the doctor who stirs up emotions in the patient which show up in the patient's behaviour. But emotions are not transferred in one direction only. The doctor's emotions, too, are stirred up by the patient, and far from being the unconcerned observer, he is indeed a partner in an emotional play and counterplay. The doctor may like or dislike the patient, approve of or be disgusted with his story, feel that he ought to fob him off with a tonic or investigate his case in detail, be interested in or bored with him. All this is usually, as we know on reflection, irrational. It remains to be seen whether the particular effects that we discovered in our doctor were specific to him only or otherwise. It is perhaps easiest to show that all doctors feel anxiety about their patients. On the instinctual level the mainspring that causes doctors to treat their patients is concern—be it about the patient or the doctor's self-esteem—and concern is closely linked to (and perhaps identical with) anxiety. This normal and basic effect is aroused whenever instinctual tension rises, whenever something has to be done.

We know from our case-history that there had been a previous relationship between doctor and patients, with certain transference and counter-transference patterns. When the father telephoned, the doctor formed a mental image of the sick child, based on these patterns. All the facts that the father gave were that the child had vomited and was feverish and in pain; but the image which the doctor formed was of a child frightened by abdominal pain and urging relief, very much like the image of the sick child he had been himself; and this similarity made the doctor feel anxious, hostile, and guilty.

The image did not exactly correspond to the real sick child; the doctor at the time had only two facts at his disposal, the feverishness and the pain. The child's fright, her demand for relief, the similarity of her emotions with those of the doctor as a child were all assumed by the doctor. Such distortions of the image of a person we are in contact with are common. We need only think of the image a lover forms of his beloved, which to the outsider is often quite unrealistic and fanciful. A highly distorted patient image will not easily lend itself to a diagnostic appreciation which would be usefully applicable to the real patient. Projection of our past and present emotions on to the image of the patient will influence treatment decisions, and gross distortions of the patient-image may lead to technical errors.

Identification

The formation of the object-image—in our case the creation of the image of the sick child in the doctor's childhood image—was the outcome of the doctor's unconscious effort to understand the patient in terms of the life experiences of both himself and the patient. He identified the object-image with his own image. There were further interlinked identification processes going on at the same time. The doctor had gone through periods of anxiety at the illnesses of his own child and could identify himself with the parents. All these identifications were part of the process of "understanding" the patient-group.

Understanding of the patient means identification with him, and thus identification forms the basis of the doctor-patient relationship. It is normal and necessary for the doctor to identify with his patient and to show anxiety or concern. There are, however, certain dangers.

The distortion of the patient-image depends on the extent of identification: the greater the identification, the more distorted the image. If the extent of identification is not controlled, the image may bear little relationship to the real patient. Over-identification may lead to such dangerous assumptions as that what is right for us must be right for others. It is probably one of the least successful approaches for the doctor to say to his patient: "I have a pain in my back, too, and I put up with it!" In our particular case, the identification of the doctor with the child, the distortion of the patient-image, led to a first-aid treatment of controversial value and not based on rational or scientific considerations.

In an applied science such as medicine, emotional bias and snap decisions cannot be avoided. It is important, though, to remember the existence of bias, distortion of the patient-image, and excess identification; so long as we recognise them and do not become too defensive or feel too guilty, they will remain natural deficiencies in our tools, which should not greatly impair the quality of our work. It would help our understanding of our patients and our relationship with them if we could bring into awareness and control that part of the identification process concerned with image-formation. But the formation of a distorted object-image and the concurrent identification with it are part of our mental defences, and their laying open is unpleasant and often impossible.

It is, however, possible, by a study of the routine snap decisions one makes in medical practice, to obtain at least a dim awareness of one's identification processes, and to beware of such snap decisions.

The Delay

Having given the snap advice, the doctor then delayed his departure for an hour or so. The reasons were perfectly valid: medical practice has to be organised in a business-like way in the interest of doctor and patient alike; a reasonable economy in time and petrol, compatible with the interests of the patient, has to be exercised; and an hour's delay in a case of acute appendicitis is no longer very serious.

Yet the call was urgent and aroused enough anxiety in the doctor to cause him to advise first-aid treatment. Furthermore, calls at inconvenient hours are common, and I have often gone without delay to urgent calls. The above reasons cannot, therefore, be complete.

We have seen that the emotional situation which led to the snap advice was complex. The snap advice over the telephone not only relieved the doctor's anxiety, but also served as a psychic defence against guilt and enabled him to eat his breakfast in peace. The snap advice and the delay in going represent the ambivalence

of the doctor's attitude to the call. Why was the call resented, and whence was the hostility derived?

In his previous dealing with the family the doctor had not minded obliging the child's mother. This time, however, he hesitated. The parents clearly thought that the child had acute appendicitis, and the doctor, too, had provisionally made that diagnosis. Considering the mother's previous reaction to the child's tonsillar illness, it seemed fair to assume that she would again demand operation. The doctor did not like this at all. He hesitated to send the child to hospital, as he might reasonably have done, and preferred a more tedious procedure. The doctor's dislike was directed against the possibility of an abdominal operation in this case.

We can see here a further outcome of his identification with the sick child. His dislike of falling in with the mother's presumed wishes was due to his own then unremembered childhood fears of death and mutilation which aroused anxiety. The doctor's hostility was, at least partly, a defence against this anxiety. The hostility was deviated into a well-rationalised delay.

Hostility always has a definite direction. The two persons, or rather images, against which the doctor's hostility was directed, were the child and her mother. The doctor resented the implicit demand by the mother for an operation—a demand which became explicit later. The limit of his willingness to oblige had been reached, and he said, "Let the mother remain anxious."

The action of delay showed also a hidden hostility towards the sick child, because in waiting there was a risk that the child might get worse. We know that the image of the sick child in the doctor arose out of his identification of the child with his own infantile self. The punitive action against the sick child was equivalent to the punishment he expected, as a child, during attacks of pain. The aggressive forces that had been directed against himself were now directed against the image of the child.

We see now one part of the doctor's mental structure which wanted him to do his duty (namely to go) battling against another part, which wanted him to delay. The result was a compromise, which worked fairly well: the doctor had time to deal with his anxiety, he found an outlet for his resentment by delaying, he could alleviate his feeling of guilt by his snap advice, and the child's pain was relieved and the parents' anxiety lessened. We flatter ourselves by calling such a fortuitous confluence of circumstances good clinical judgment.

Guilt

The feeling of guilt might seem peculiar to our case, because the doctor happened to have had certain guilt-laden events in his childhood. But the guilt was not derived only from the doctor's childhood memories. Like most psychic events, it had multiple sources. The doctor's initial anxiety mobilised hostility, or resentment, which in turn mobilised guilt. But even had there been no resentment, we should have found in our doctor the urge to do something for the child and the parents, arising out of the feeling of "concern", which contains an element of threat. The concern about the patient implies a feeling that not to attend to the patient's need might endanger the doctor—either in his self-esteem or in his relationship to the patient—and this feeling is guilt.

The mobilisation of guilt in doctors by their patients is a general and essential spring of their professional activities. The super-ego function which we call professional conscience or a sense of professional duty is based on the sense of guilt, as is all social conscience. The safeguard against default is not the threat of punishment by external agencies, but the internal threat to our self-esteem. This threat, the expression of the conflict between what we ought to do and what we want to do, is, affectively, guilt. Without it, no doctor-patient relationship in our sense would be possible. If identification is the basis of the adaptation of the doctor in the doctor-patient relationship, guilt is the affective driving force.

It is important for the doctor to become aware of, and to be able to accept, guilt. Even the particular arousal of guilt (as in our case) which represents special pleading is common enough to cause irrational treatment of the patient and unnecessary suffering to the doctor. Some doctors cannot do enough for their patients (not always to the patients' advantage), and wear themselves out for trifles; others even committed suicide because they thought they had not done an operation skilfully enough, expiating unconscious guilt and paying far too high a price.

Our doctor felt that something ought to be done to keep the parents occupied, so he kept them busy with the hot-water bottle. In terms of affects, he felt that they were not doing enough for the child. In keeping them actively employed, he reassured not only them but also their image in his own mind, and, having identified himself with them, he reassured himself. The doctor felt the urge to make them into "better" parents, and thus, by identification, became "better" himself.

This urge to produce "good" images of our patients, and thus a "good" self by identification, may lead to therapeutic overactivity which may be disastrous. The urge for the doctor to be a "good" doctor may make it hard for him to bear that at times he cannot cure a patient, and the hapless patient who will not or cannot get better may be mercilessly punished with drugs, operations, and specialist consultations, and eventually perhaps abandoned altogether. There is an element of such compulsion towards "goodness" in the spot advice in our case, too.

The Clinical Examination

When I arrived at the house I obtained a brief history; I then examined the child systematically, beginning with the throat and ears, and including the chest, nervous system, and abdomen, and taking her temperature and pulse-rate. On reflection later, however, I realised that I had examined the throat, ears, nervous system, and chest rather perfunctorily, but the abdomen minutely, including rectal examination.

In busy general practice one cannot always make detailed general examinations, but when I do so, I take pleasure and pride, as most doctors do, in the skill with which I can perform the various diagnostic procedures, and I am thrilled when I discover an unusual sign which shows that I still possess the technical skill that medical education and experience have taught me. But now I had certainly not used my skill to its best advantage. I inspected, percussed, and auscultated the child's chest, but did not find the abnormal signs which two hours later—when the pædiatrician had demonstrated them to me—were fairly obvious. It seems that my examination was made as if it was meant merely to confirm the already settled diagnosis of acute appendicitis. I was apparently searching for confirmatory evidence, turning a blind eye on such signs as might have indicated a different diagnosis.

Yet, I could not accept the diagnosis of acute appendicitis, though I could think of no other. No doubt the mutilation anxiety was one factor that held me back from accepting the diagnosis, with its consequence of operation. But had this been the only reason, then careful and observant examination of the child would have given me enough clues to pronounce joyfully a different diagnosis, and I should have probed for signs of pneumonia rather than overlooked them.

The doctor's attitude was ambivalent: he wanted to find the source of the child's illness in her abdomen, as in his infant days the source of his pain had been presumed to be in his abdomen, yet he did not want it to be there, on account of his mutilation anxieties. His affectively determined conviction

that the illness was in the abdomen overshadowed his contrary wish, and made him overlook the other diagnostic signs. But in spite of this there was doubt, and a desire to achieve a correct diagnosis. The signs which he became aware of later, with the pædiatrician, must have been perceived and noted, though unconsciously. This was enough in a man with medical training and experience to prevent him from declaring bluntly that this was acute appendicitis. The perceptive part of his mental apparatus, his ego, was largely occupied with the building of defences against his anxiety, and only a part of the ego was free to deal objectively with reality.

Such a reduction of the ego and narrowing of the sense of reality will happen in the countertransference when unconscious affects are mobilised in the doctor to which he must adapt himself by psychic defences. Blind spots will then impair some of his ability to perceive or connect logically. A knowledge of one's own sources of anxiety would, of course, help one to recognise the blind spots, or, failing that, a second opinion may help to rectify one's errors. It is important to remember that diagnostic and therapeutic errors may arise not only through the limitations of one's knowledge or technique, but also, perhaps largely, through affective impairments of one's perceptive and reasoning ability.

Choice of Consultant

My inability to arrive at a firm diagnosis added further to my anxiety. Of course, I often have to act therapeutically on an uncertain diagnosis; but in this case it seemed important not to do so. I had to be a " good " physician, one who can diagnose and heal.

Sometimes we find it easier and sometimes harder to admit medical defeat, or, in terms of the counter-transference, sometimes we can bear to be " bad " and sometimes we cannot. I had identified myself with a child who was ill or, in terms of my infantile fantasies, " bad ". I had identified myself with the parents too, and the load of guilt in having to be both a " bad " child and a " bad " parental figure would have been too much. Previously I transformed the parents into " actively good " parents, for the relief of guilt. Similarly, I had to transform myself into an " actively good " doctor.

There was only one way of doing so—by calling in a consultant on whose opinion I could rely. Psychologically speaking, I was searching for another " good " doctor with whom I could identify myself and thus, by the process of identification, become a " good " doctor myself. I put the alternative of hospital or domiciliary consultation before the patient-group but, in fact, the decision had already been taken. I knew that the child did not want to go into hospital, and I trusted myself to persuade the mother to my decision.

The pædiatrician came. I agreed with the consultant on the points he raised, and felt much relieved. Anxiety and guilt left me on identification with the consultant. It was, after all, not the child's abdomen that was the seat of the trouble; there was no question of operation, and my doubts about the diagnosis had proved that I was a " good " doctor.

Why did the doctor call a pædiatrician and not a surgeon into consultation? After all, acute appendicitis was the nearest approach to a diagnosis, and the proper person to consult would have been a surgeon. But the doctor tried, even in the selection of his consultant, to fight shy of a diagnosis that might involve operation. His infantile mutilation anxieties determined the choice of consultant. Again, this affect-determined choice is not restricted to the case under discussion. Many patients with hysterical conversions symptoms are sent to cardiologists, neurologists, and surgeons, sometimes with and sometimes without the rationalisation of " to exclude organic disease ", but always in the fervent hope that the doctor may be spared the anxiety-arousing, upsetting recognition of emotional tempests in the patient, which in turn, in the counter-transference, stir up the doctor's emotions.

The Penicillin Injection

The final step was the injection of penicillin. The pædiatrician had advised antibiotics without specifying them. It is my habit to use oral antibiotics in children to avoid the hurt of injection. But now I felt differently ; I thought of penicillin as a specific for pneumonia, of the saving in the national drug bill, and of the quicker action of parenteral administration, and I felt suddenly very righteous about giving injections.

Looking at the case as a whole, the question of operations and maiming has been prominent. We remember that the character of my relationship with the patient-group had been determined by my compliance with the mother's wish for tonsillectomy. An operation, beneficial as it may be, is mutilating. The doctor was used by the mother as an instrument for this symbolically destructive action. When he complied, she was very pleased with him and thereby made him feel that he was a " good " doctor. The same happened in the case of the appendix. The mother hoped, and even pressed, for the relief of her anxiety over the sick child again through attack on the bodily integrity of the child, and again the doctor was to be the instrument. Now, however, the doctor could not agree, because this aroused his own mutilation anxieties. But he had hostile feelings of his own towards the child, connected with his infantile self-punitive desires.

This aggression was successfully repressed until the final act, the injection, when the child could be hurt, yet where the action could be freed from all guilt, as the doctor's rationalisation has shown. In fact, the deep justification felt by the doctor for the injection was a form of over-compensation, a way of saying: " Not only have I done no wrong, I have done very much right."

The doctor liked his little patient, and wanted to help her and make her well, but through identification he felt hostile and unconsciously wanted to hurt her. We can often discover aggressive and hostile slants in our treatment activities: evil-tasting medicines, reproaches, coldness, excessive brevity, refusals, operations. We usually have very good excuses, but the emotional background is one of hostility. In our case, the unconscious emotions of liking and wanting to hurt were the expression of two basic drives directed towards the patient—affection and aggression—which had been in conflict. Affection had led to identification, willingness to help, concern, anxiety. Aggression had led to hostility, delay, guilt. Now, they had become fused. This fusion was expressed in the helping, yet hurting, act of the penicillin injection.

The final act illustrates well the fundamental source of the affects, especially anxiety, which we have studied previously. The conflict between libido and aggression, brought about tension, which was felt as anxiety. Various other tension-raising and anxiety-producing psychic events in turn happened, as we have seen, and increased the basic anxiety.

Summary

In an ordinary illness, a case of pneumonia, the influence of the attitudes of the doctor on diagnosis and treatment have been studied. The attitudes are based on the identifications of the doctor with the patient and his family, and the underlying emotional driving forces in the doctor-patient relationship are anxiety, hostility, and guilt. They may be used in the service of the patient, or to his detriment, because they may blind the sense of reality in the doctor, unless he is aware of them and their sources.

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UTERINE IRRITABILITY

THE CONCEPT AND ITS CLINICAL APPLICATIONS, EXEMPLIFIED BY THE OXYTOCIN-SENSITIVITY TEST*

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THE uterus can be stimulated to contract in many ways.

Vaginal palpation, dilatation of the cervical canal, or the introduction of foreign bodies into the uterus induce contractions or modify the spontaneous rhythm. Electrical stimulation of the myometrium or of the cervix will cause local and sometimes general contractions. Intrauterine infection is said to initiate contractions. Oxytocin, ergometrine, and other oxytocic drugs increase the frequency of contractions, while adrenaline, papaverine, ether and chloroform anæsthesia, and amylnitrite reduce it. Emotional stimuli—such as showing a hypodermic needle to a patient—may excite a contraction. The same stimulus in a patient having regular contractions may cause a contraction to be missed. Stimulation of the nipples is also known to produce uterine contractions.

The magnitude of the stimuli required to elicit a change in myometrial activity and the response of the uterus to a given stimulus are both very variable quantities.

The obstetrician wishes to know the overall state of uterine irritability. Will his patient abort spontaneously?

RESULTS OF OXYTOCIN-SENSITIVITY TEST FOR INDUCTION OF LABOUR BY LOW RUPTURE OF MEMBRANES (AMNIOTOMY)

Test (unit)	No. of cases	Time to labour onset (hrs.)				Treatment
		Mean	Min.	Max.	S. D.	
Series A:						
0·01	8	1·5	0	4	1·3	Amniotomy after test
0·02	14	4·7	0	19	6·1	
0·03	14	11·2	1	23	8·4	
0·04	5	11·0	3	30*		
0·05	3	12·3	1	34*		
0·06	2	96	96	96†		
Series B:						
0·01–0·03	38	11	86% in labour in 24 hr., amniotomy before test.			
0·04–0·06	16	49	54% in labour in 24 hr.			
Series C: Patients treated by oxytocin intravenous infusion until in labour or sensitive to 0·03 unit or less. Initially 0·04 or more:	11	35				

* 1 had oxytocin also.
† 2 had oxytocin for four days.

Is labour imminent? Will amniotomy or an oxytocic induce labour? To answer him adequately, the causal factors ought to be assayed separately and their composite effect should then be integrated by some master mind. Fortunately, however, the patient is a ready-made laboratory and calculating machine which will do the assay and summation and provide the answer directly. Since treatments are aimed at increasing or reducing activity, the responsiveness of the uterus to them can be measured by adding or subtracting a known stimulus of the magnitude required to evoke or suppress activity. As uterine irritability may vary spontaneously in a matter of hours, a quick test of irritability is more useful than a lengthy assay.

* Substance of a lecture and discussion given at Symposion über Wehenphysiologie und Pathologie held by the Mittelrheinische Gesellschaft at Marburg in May, 1957.

This is not to question the need for further research on the prime causes of myometrial hypoactivity or hyperactivity. It is always satisfactory to treat disorders by restoring normal levels of constituents where these can be shown to be in excess or deficient, provided that the abnormal levels found by analysis are prime causes and not compensatory changes. But the present inadequacy of this approach is evident from the ineffectiveness of substitution therapy as contrasted with the effectiveness of oxytocic therapy and treatment through correction of mechanical factors.

There are many ways in which an overall test of uterine irritability could be performed, and we cannot assume that all would give the same or comparable answers. (Stimuli which act on the uterus through the mediation of the nervous system or an intermediate endocrine reaction could hardly be expected to bear a constant relation to those that act directly on the myometrium.) Two possible methods are:

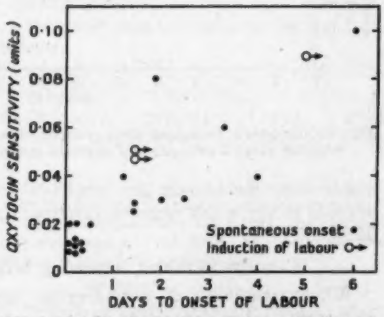

Fig. 1—Relation between oxytocin sensitivity and spontaneous onset of labour.

Arrowed circles indicate patients in whom the onset of labour was induced artificially. This graph, the first evidence of the practical usefulness of the test, was exhibited at the International Congress of Obstetricians and Gynæcologists at Geneva in July, 1954.

1. Direct electrical stimulation of the cervix or fundus of the uterus to evoke a local contraction of the myometrium. This contraction, however, may not spread to the whole uterus, and is difficult to observe.

2. Intravenous administration of minimal doses of oxytocin, 0·01 to 0·1 unit, to cause an increase of uterine activity of observable magnitude. In cases of excess activity a reverse measurement can be made by giving minute doses of lævo-adrenaline, which is a potent inhibitor of uterine action.

The oxytocin method of assaying irritability is closely enough related to the natural contractile mechanism to be of real value as a clinical sign. Our investigations relating oxytocin sensitivity to the onset of spontaneous contractions, and to the success of methods used to induce labour, support the view that the inert uterus is not myasthenic but merely unable to contract as a whole. The reason why it cannot contract as a whole is that the

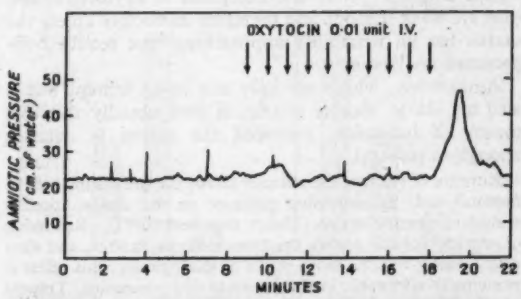

Fig. 2—Tocograph recording from patient without spontaneous contractions and with oxytocin sensitivity 0·10 unit.

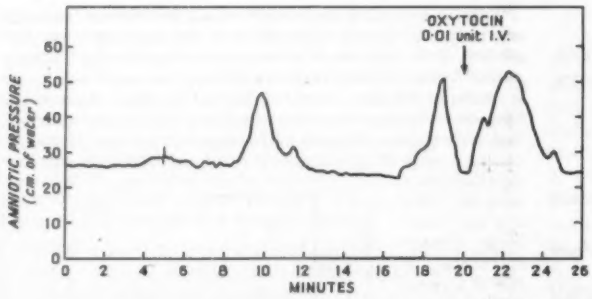

Fig. 3—Tocograph recording from patient with spontaneous contraction every 9 minutes and oxytocin sensitivity 0·01 unit.

conduction mechanism by which a local contraction spreads to the whole organ is inactive (Csapo 1955, Jung 1956).

Clinical Value of Assessing Irritability

When irritability is considerable, labour is usually imminent; when irritability is less, a longer time will probably elapse before labour begins spontaneously. This differentiation enables patients to be kept in hospital or to be sent home. When a woman has mild toxæmia or is past term, measurement of uterine irritability helps the clinician to decide whether to induce labour or await its onset. When delivery is urgent, labour will be induced in any event, and then the test enables a decision to be

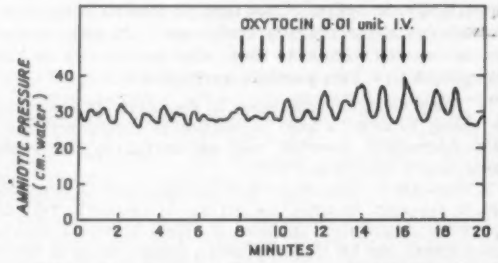

Fig. 4—Ineffectiveness of oxytocin in uterine fibrillation.

made between oxytocin therapy and amniotomy, or possibly a cæsarean section if the uterus is non-irritable and speedy delivery is required. Patients with a delayed onset of labour will often be found to maintain the same degree of reduced irritability day after day, as though they had reached the ceiling of their endocrine or other capabilities.

Methods of inducing labour act because they are biological irritants. With the exception of oxytocic drugs, they are weak irritants and therefore ineffective unless the uterus has an irritability approaching that required for spontaneous labour.

Amniotomy, which not only acts as an irritant but is also an aid to shorter labour, is undoubtedly the best means of induction, provided the uterus is irritable enough to respond.

Rupture of the fore membranes allows the presenting part to descend and, by increasing pressure on the cervix, directly stimulates uterine action (Huber and Beck 1957). Reduction of uterine volume makes the muscle-fibres shorter, and they may thereby become more active physiologically; this effect is principally noticeable in the presence of hydramnios. Trauma of the cervix may contribute to irritability chemically or through the nervous organisation. Low, opposed to high, rupture of membranes owes its superior effectiveness to the first of these factors.

The table and figures show that amniotomy is very successful when the oxytocin test has a numerical value of 0·04 unit or less, and is progressively less successful as the sensitivity approaches 0·08 unit. The correlation between the oxytocin sensitivity and the time from amniotomy to the onset of labour is significant at a probability of 200 to 1.

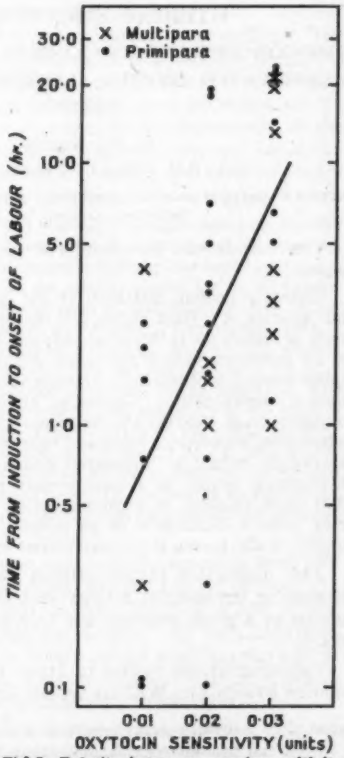

Fig. 5—Relation between oxytocin sensitivity and onset of labour after amniotomy of fore membranes in patients more sensitive than 0·04 unit. The correlation is significant at 200 : 1 probability.

Oxytocin-sensitivity Test

The patient is in bed and at rest. Ambulant patients should

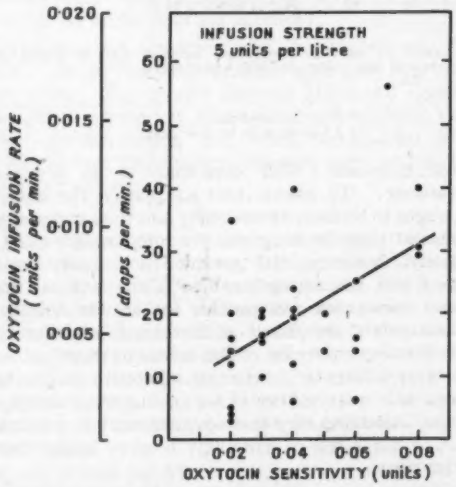

Fig. 6—Relation between oxytocin sensitivity and oxytocin-infusion rate required for induction. The correlation is significant at 50 : 1 probability.

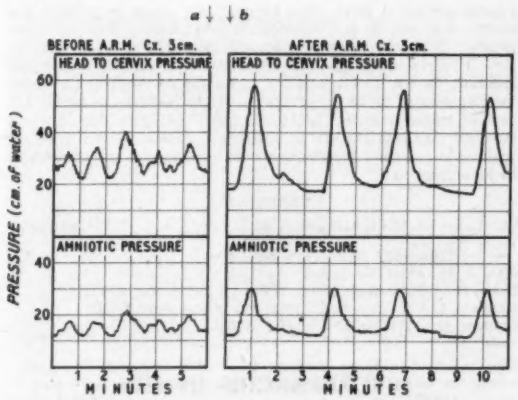

Fig. 7—Direct irritating effect of amniotomy resulting from increased pressure on cervix: *a*, before rupture of membranes; *b*, after rupture of membranes. Cervix 3 cm. dilated. There was an interval of only 3 minutes between *a* and *b*.

rest for about an hour. The patient is assured that the investigation is painless and harmless and will aid her treatment.

Some form of contraction recorder is placed on the abdomen (tocograph) and a recording made for a quarter of an hour or more to note any spontaneous contractions. Oxytocin 0·01 unit per ml. is prepared in a 10 ml. syringe, and the injection is begun at the end of a spontaneous contraction or of any spurious contraction elicited by the exhibition of the syringe. An arm vein is chosen, and care must be exercised to ensure that the patient's clothes do not occlude the venous return. The patient is asked to close her hand from time to time during the injections to prevent venous stasis in the arm. 0·01 unit is injected at minute intervals until a contraction occurs. The total dose given is called the oxytocin sensitivity.

The intensity of the contraction elicited can be noted and is often found to be much stronger than the spontaneous contractions which preceded the test. This shows the capabilities of the myometrium and that the spontaneous contractions were not exciting the whole uterus.

In some patients with a fast spontaneous contractile rhythm, perhaps one or more weak contractions per minute, a condition called by Alvarez and Caldeyro-Barcia (1954) uterine fibrillation, the test organises this activity into a generalised contraction of normal strength; but in a few patients oxytocin only accentuates the fast rhythm. The proper treatment of patients in this latter category has not been determined.

The result of the investigations into the value of the test are shown by figs. 1–7.

Investigations, not reproduced graphically, showed that there was no significant relation between results of the test and the length of labour. This was to be expected because the irritability is related to the onset of labour and not to the difficulties to be overcome. Further, no significant relation was found between the interval from induction to the onset of labour and the extent to which the cervix is taken up at the time of induction. Examination of the cervix did not appear to be a satisfactory alternative to the oxytocin-sensitivity test.

Summary

The biological irritability of the uterus can be assessed by measuring the minimal dose of oxytocin required to produce a perceptible change in myometrial activity. The magnitude of dose required is used to specify the irritability.

This oxytocin-sensitivity test has useful clinical applications. When labour is induced surgically, the results of the test bear a significant relation to the interval between amniotomy and the onset of labour. They are also related to the rate of oxytocin infusion required to establish regular labour-like contractions.

In normal patients near term, the test indicates how long an interval may be expected before the spontaneous onset of labour. If the test shows a constantly low uterine irritability day after day, the infant is likely to be post-mature unless labour is induced.

Other tests on the same principle are possible but have not been investigated.

The test has applications to the study of uterine action because it provides a method of measuring the change in irritability resulting from administration of drugs or from the application of other stimuli to the myometrium or its nerve-supply.

This work was undertaken as part of a programme of obstetric research supported by the Nuffield Foundation and the Rockefeller Fund of University College Hospital Medical School. In addition, the support and encouragement of Prof. W. C. W. Nixon and the staff of the obstetric unit is gratefully acknowledged.

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BLOOD-GROUPS IN TUMOURS OF SALIVARY TISSUE

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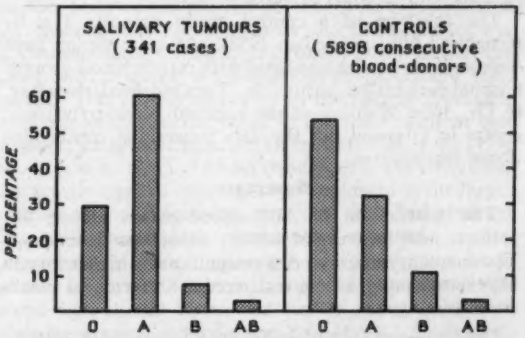
IN view of the increasing evidence of a relationship between ABO blood-groups and certain diseases, I have in the past two years ascertained the blood-groups of patients with tumours of salivary tissue. Of 395 such patients reviewed, the blood-group is now known in 341.

The figure shows the general results side by side with those obtained in a control series of 5898 consecutive new registrations of blood-donors at the regional blood-transfusion centre in Glasgow in 1952–55. Statistically the preponderance of group A in the tumour series is highly significant. It will be seen that the gain in this group is at the expense of group O.

The table provides more detailed information about the blood-groups of the patients in the various categories of salivary-gland tumour and in the control. It will be seen that, in all three types, there is a striking preponder-



Distribution of blood-groups in 341 patients with tumours of salivary tissue and in 5898 controls.

INCIDENCE OF DIFFERENT TYPES OF TUMOURS OF SALIVARY TISSUE ACCORDING TO BLOOD-GROUPS

Blood-group	Control	Pleomorphic adenoma	Carcinoma	Adeno-lymphoma	Total
A	1906 (32·3%)	170 (57·8%)	29 (82·9%)	7 (58·3%)	206 (60·4%)
B	637 (10·8%)	23 (7·8%)	1 (2·8%)	1 (8·3%)	25 (7·3%)
O	3177 (53·9%)	92 (31·3%)	5 (14·3%)	3 (25·0%)	100 (29·3%)
AB	178 (3·0%)	9 (3·1%)	—	1 (8·3%)	10 (2·9%)
Total	5898	294	35	12	341

ance of group A and a corresponding rarity of group O compared with the controls.

In analysing the figures, as groups B and AB are relatively constant throughout, group O has been compared with groups A, B, and AB combined together, and the results compared with the control as follows:

(1) Pleomorphic adenoma ($\chi^2=57{\cdot}3$) shows a highly significant percentage with group O significantly higher for the controls as against pleomorphic adenoma.

(2) Carcinoma ($\chi^2=21{\cdot}9$) again shows a highly significant percentage with group O significantly higher for the controls.

(3) Adenolymphoma does not show a significantly lower percentage of group O ($\chi^2=2{\cdot}94$). The indications, however, are that, if the number of patients were increased, significance would be established.

(4) All types of salivary tumours were finally considered together and, as would be expected, there was a highly significant ($\chi^2=77{\cdot}9$) percentage, with group O significantly higher for the controls.

These findings provide convincing statistical evidence of an unusually high incidence of blood-group A in this series of patients with salivary tumours. This is all the more striking because in Scotland group A is found in a smaller proportion of the population than in England.

Discussion

From recent investigations into the relationship between disease and ABO blood-groups it appears that these groups are associated with susceptibility to some disorders and relative immunity to others. The incidence of group A has been shown to be unduly high in patients with pernicious anæmia (Buchanan and Higley 1921), carcinoma of the stomach (Aird et el. 1953), and bronchopneumonia in infancy (Struthers 1951). Group O occurs with excessive frequency in persons with peptic ulceration (Aird et al. 1954, Brown et al. 1956).

Of these associations the most striking so far published is that between the blood-group and lesions of the stomach and duodenum. In the present investigation, however, an even greater excess of group A has been found in patients with tumours of salivary tissue.

The selection of a control group presents a well-recognised difficulty (Allan 1954). As a proportion have diseases known to be associated with certain blood-groups, hospital patients are unsuitable. I am indebted, therefore, to Dr. John Wallace, of the regional blood-transfusion centre in Glasgow, for the data concerning consecutive donor registrations.

Summary

The distribution of ABO blood-groups among 341 patients with tumours of salivary tissue was determined. The frequency of group A was significantly higher than in 5898 consecutive donors registered at the regional blood-transfusion centre.

85 of the patients attended the Western Infirmary and the Southern General Hospital, Glasgow (1950–55), and the others the Glasgow Royal Infirmary (1935–56). I should like to thank the medical superintendents of these three hospitals for access to patients and records, and Mr. R. A. Thomson for considerable help in tracing the Royal Infirmary patients. I am indebted to Prof. W. A. Mackey, Prof. T. Symington, and Dr. A. Dick for valuable advice and criticism; to Dr. I. Cook and Dr. Robert McAndrew for cross-checking most of the blood-groups; to Dr. R. A. Robb, of the department of mathematics in the University of Glasgow, for providing statistical assistance; to Mr. P. Elliott for the tables; and to all the surgeons and general practitioners who have assisted me throughout the investigations.

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DISCREPANCIES IN THE DIAGNOSIS OF GENETIC SEX BY LEUCOCYTE MORPHOLOGY

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THE development of cytological methods for the diagnosis of genetic sex has been a great stimulus to the study of human intersexuality. Two techniques are available :

(1) A high proportion of the intermitotic nuclei of the cells of the skin and many other tissues show, in the female, a characteristic mass of heterochromatin usually lying adjacent to the nuclear membrane. Such masses are seen in less than 10% of the nuclei in normal males (Moore and Barr 1954).

(2) Davidson and Smith (1954) described the presence of a nuclear appendage or " drumstick " satellite on the nuclei of polymorphonuclear leucocytes. In the normal female more than 6, and in the male less than 6, such bodies were found in a count of 500 mature polymorphs.

For the sake of brevity the genetic sex determined by the first method will be described here as the nuclear sex, and by the second as the polymorph sex. We record two cases in which a discrepancy was found between the results obtained by the two methods, and we discuss the validity of the leucocyte method.

Case-reports

Case 1.—A child aged 20 months (described in detail by Ashley and Jones 1958) is considered to be an example of complete sex reversal in that the nuclear sex is male but the phenotype is female and the gonads are histologically indistinguishable from normal infantile ovaries. Cells from the skin and buccal mucosa were examined on several occasions, and heterochromatin was always found in less than 6% of the resting nuclei. Examination of blood-films, however, showed that " drumsticks " were present in 3% of the polymorphs, a frequency well within the range regarded as female.

Case 2.—This patient, a case of Turner's syndrome, was seen at the age of 14 months because of poor gain in weight. She then weighed 16 lb. 5 oz., her birthweight having been 6 lb. 14 oz. She was undersized, with slight webbing of the neck and marked cubitus valgus. Her external genitalia were normal. Heterochromatin was found in 4% of the cells of her buccal mucosa, and her genetic sex was diagnosed as male. Examination of blood-films, however, showed " drumsticks " in 7% of the polymorphs.

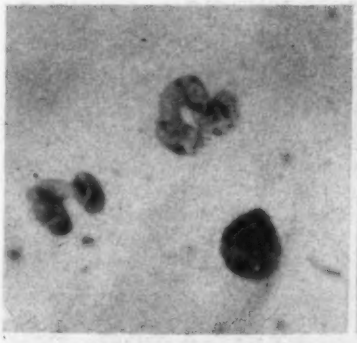

Fig. 1—Neutrophil band cell showing mass of sex chromatin. (Feulgen. × 1500.)

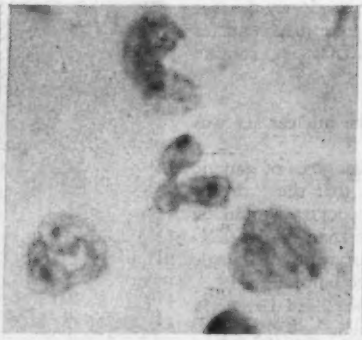

Fig. 2—Neutrophil polymorph showing mass of sex chromatin. (Feulgen. × 1500.)

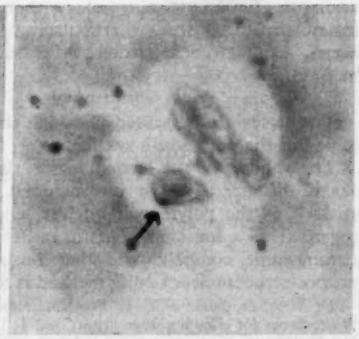

Fig. 3—Neutrophil polymorph showing mass of sex chromatin and satellite "drumstick". (Feulgen. × 1500.)

Discussion

During the past two years many workers have reported discrepant results in the diagnosis of genetic sex by the two methods.

Plunkett and Barr (1956) reported two cases of Klinefelter's syndrome in which the nuclear sex was female but the polymorphs had "drumsticks" in only 6 of 784 cells and 6 of 900 cells. This frequency of "drumsticks" is just outside the normal range for females. Similar discrepancies were seen by Riis et al. (1957) in two cases of Klinefelter's syndrome; by Kosenow (1957) in a case of Turner's syndrome of female nuclear sex; by Wiedemann (1957) in cases of Klinefelter's syndrome; and by Armstrong et al. (1957) in a case of true hermaphroditism in which the nuclear sex was female.

All these discrepancies were in the same direction—i.e., the nuclear sex was female, but the polymorphs showed a smaller percentage of satellites than is normal in the female. Our two cases show an incongruity in the opposite sense, the nuclear sex being male but the polymorphs showing satellite frequencies well within the female range. Greenblatt et al. (1957) have reported the same discrepancy in three cases of Turner's syndrome.

Such findings as we have mentioned must raise the question of the validity of each method of genetic sexing vis-à-vis the other.

Lennox (1956) has reviewed the subject of nuclear sexing and has discussed the evidence supporting the current view that the "sex chromatin" of the resting nucleus is closely associated, if not identical, with the XX-chromosome complex.

Davidson and Smith (1954) were tempted to regard the nuclear satellite as analogous to Barr's sex chromatin, which had become pinched off in drumstick form, and thus analogous to the XX-chromosome complex. Davidson (1957), however, has reported discrepant findings in Klinefelter's syndrome and now regards the satellite bodies of the leucocytes as being less closely linked to the XX-chromosome complex than is the nuclear heterochromatin.

Briggs and Kupperman (1956) carried out polymorph sexing on twenty abnormal males and forty-one abnormal females and described the results in fifteen cases as "not conforming exactly to the criteria of Davidson and Smith but diagnosable". They emphasised this point and suggested that the incidence of "drumsticks" might have been influenced by the abnormal hormonal environment seen in these cases of aberrant sexual development.

Some workers, however, still regard the polymorph method of sexing as an accurate indication of the genetic sex. Kosenow (1956) recommends that it should be used in preference to skin biopsy or mucosal smear, and cases of aberrant sexual development have been recorded in which the genetic sex has been diagnosed only from blood-films.

Carpentier et al. (1957) found a sex difference in the leucocytes of the rabbit, a species in which the conventional method of nuclear sexing is inapplicable. They claimed to find evidence of the subdivision of the "drumstick" in a manner analogous to the "diplococcus form" of the sex-chromatin body of the nerve-cell described by Crouch and Barr (1954) and they regard the "drumstick" in the rabbit as a cytological expression of the XX complex, as do Sachs and Danon (1956) in man. Cytological studies of human blood-cells are scanty. Riis (1957) found that sex chromatin could be identified in the lymphocytes of the peripheral blood, and Ashley (1957) reported the occurrence of sex chromatin in the resting nuclei of cells of the blood and bone-marrow in man. Sex chromatin was identified in each type of cell of the myeloid series, including polymorphs, which showed also the "drumsticks" of Davidson and Smith (1954). It was identified also in lymphocytes and in early and intermediate normoblasts. The nucleus of the late normoblast, which is not in an intermitotic phase, shows no sex chromatin. Figs. 1–3, taken from a specimen of bone-marrow from a normal fecund female, show masses of heterochromatin beneath the nuclear membrane in mature polymorphs and a band cell, one of the former showing also a "drumstick" satellite.

The finding of discrepancies between the nuclear sex and the polymorph sex, together with the cytological demonstration in leucocytes of typical sex-chromatin masses distinct from the nuclear satellite, indicates that leucocyte morphology cannot be accepted as a valid criterion for the diagnosis of genetic sex, and that the satellite body of the polymorph should be regarded as a sex characteristic rather than as the expression of the XX-chromosome complex. It is likely, however, that the characteristic leucocyte morphology is genetically controlled. This view is supported by the finding of female-type polymorphs in the blood of the male twins in two instances of blood chimerism in man (Booth et al. 1957, Nicholas et al. 1957). In both these cases it was postulated that female myeloid cells had been implanted in the bone-marrow of the male twins, and that they had retained their ability to produce "drumstick" satellites.

In conclusion we suggest that the determination of genetic sex, which has now become an important diagnostic tool, should be carried out by the method, and using the criteria, of Moore and Barr (1954). The buccal mucosa affords the simplest method of obtaining suitable cells, but the skin and many other tissues may be used if

available. Leucocyte morphology, though clearly deserving much further study, particularly where discrepancies occur, cannot be regarded as a satisfactory routine method.

Summary

Two cases are described in which the nuclear sex was male but the polymorph sex female.

The validity of the hæmatological diagnosis of genetic sex is discussed, and it is concluded that the "drumsticks" of the polymorphonuclear leucocytes should be regarded as a sex characteristic rather than as the XX-chromosome complex, and that for routine diagnostic purposes the nuclear sexing method is to be preferred.

We wish to thank Miss I. Forshall, F.R.C.S., and Dr. R. H. White-Jones for allowing us to report case 1; Dr. A. E. McCandless for allowing us to report case 2; and Dr. E. G. Hall for helpful discussion and advice.

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CAVERNOUS HÆMANGIOMA OF THE LUNG

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IN a review of the literature Stringer et al. (1955) collected 140 published cases of cavernous hæmangioma and added 2 of their own. In 135 the ages of the patients when first seen had been recorded:

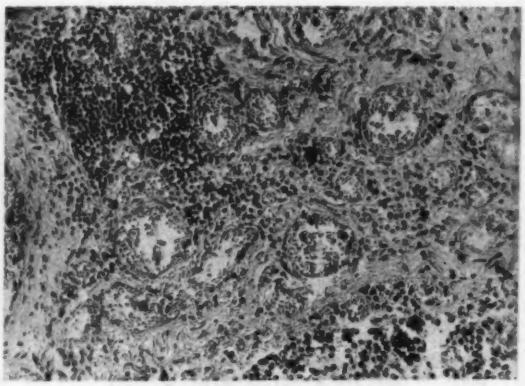
Age	*No. of Cases*	*Age*	*No. of Cases*
0–7 days	3	31–40 yr.	16
7 days–1 yr. ..	3	41–50 yr.	19
1–10 yr.	11	51–60 yr.	15
11–20 yr.	23	61–70 yr.	4
21–30 yr.	40	71–80 yr.	1

We report here another case, in a man of 66, which has some unusual features.

Case-report

A tall lean shepherd, of 66, complained in 1954 that he had had a cough for many years. In 1945 he had coughed up a quantity of blood but had not felt ill and had not sought medical advice. In 1949 he had had another hæmoptysis, followed by pyrexia for several days. No further attack occurred until 1954, when a bout of hæmoptysis was accompanied by an exacerbation of the cough.

No abnormal physical signs were found in the chest. The radiologist reported: "Hypertensive heart shadow. The lung fields show moderate emphysema but no other lesion." It was thought that the hæmoptyses might have been due to epistaxis or to the strain of coughing. The patient did not attend at the surgery again, and in 1957 was found dead in bed. A coroner's inquiry followed.



Cavernous hæmangioma of lung.

Necropsy Findings

There were no angiomata on the skin or in the mouth, and there was no clubbing of the fingers. Each bronchus contained about 1 oz. of liquid blood. The one leading to the left lower lobe was a little dilated and its inner surface red and velvety. Most of the left lower lobe was red and indurated, and some of the smaller air passages exuded pus. On the external surface the affected zone was slightly raised and had a serpiginous margin. There was no shrinkage of the lobe as a whole. The lung tissue elsewhere showed moderate œdema. There was some hypertrophy of the left ventricle (heart 370 g.). The coronary arteries were of calcified pipe-stem type, and the descending branch of the left vessel was blocked for about an inch by adherent antemortem thrombus. No other significant changes were found.

Histology

Bronchus to the left lower lobe.—The mucosa was almost fully replaced by a vascular sheet densely infiltrated by plasma cells and lymphocytes, the cells penetrating deeply among the submucosal secretory glands. There was no structural arrangement suggesting specific inflammation. A smaller air-vessel close by showed the same changes with almost complete blockage.

Red zone of the lung.—The centre consisted of a cluster of vascular spaces filled with blood and embedded in dense inactive fibrous tissue (see figure). At the periphery relatively normal lung tissue was solidly packed with extravasated blood. At the junction of the two zones there was a patchy and fairly dense infiltration by plasma cells. There was also a tiny focus of suppuration accompanied by necrosis. The lesion was evidently an ancient cavernous angioma, the hæmorrhages from which had led to fibrosis and the migration of chronic inflammatory cells, with a secondary acute infection added.

Discussion

Willis (1955) states that hæmangiomata are in practically all cases malformations and not neoplasms. They may arise in one particular tissue or as part of a syndrome. The tissues which may be affected are the skin, bones, central nervous system, peripheral nerves, and viscera. The syndromes are combinations of lesions in the following sites:

(1) Skin and mucosæ.

This hereditary disorder is particularly associated with the name of Osler (1901), who described 3 cases. At least four workers had drawn attention to the disease previously. The essential features are the skin lesions, epistaxis from nasal lesions, and the coincidence in several members of a family. Less usually hæmorrhages take place from the trachea, alimentary tract, and urinary

tract, and in the brain. A detailed survey of 218 families was made by Garland and Anning (1950) and subsequently of a further 20 families.

(2) The skin and various viscera.
(3) The skin and central nervous system.
(4) The retina, central nervous system, and viscera.

In the present case there were no angiomatous lesions other than in the lung. Until quite recently the solitary hæmangioma of the lung was considered to be very rare.

Whitaker (1947) could find only 5 reports and added a further 2 cases. Cleland (1948) cited Whittaker's findings and described 1 further case. Stringer et al. (1955) collected 140 cases and added 2 of their own. The first published description is that of Churton (1897), who demonstrated the lungs of a boy, aged 12 years, affected by "multiple aneurysms of the pulmonary artery". The first clinical diagnosis was made by Smith and Horton (1939) and the first successful surgical removal by Hepburn and Dauphinee (1942).

Stringer et al. (1955) and other workers call the condition pulmonary arteriovenous fistula. The essential disturbance of normal physiology is that the angioma is fed by the pulmonary artery and drained by the pulmonary vein, a shunt being provided for venous blood, which, if large enough, will lead to dyspnœa, cyanosis, finger clubbing, and polycythæmia. The last-named may, of course, lead to peripheral thrombosis, cardiac hypertrophy, headache, and so on. Hæmoptysis develops in a minority of cases and leads to further difficulty in diagnosis. If the lesion is large enough, a loud bruit is discovered over the lesion.

In the present case cough and hæmoptysis were the only features. The lesion was too small to provide either a serious shunt, an audible bruit, or a lesion visible on radiography. The published cases are practically all of grave morbidity: in infants in whom the condition was compatible with life for days or weeks; in young persons regarded as the subject of congenital heart-disease; and in adults so incapacitated by defective oxygenation that lobectomy was imperative. Whitaker's (1947) case 2, however, a man, aged 33, with lip angiomata, a bruit over the tumour, and worm-like opacities in the lung, was symptom-free when operation was suggested and declined to undergo it.

The following details cited from Stringer et al. (1955) give some indication of the condition seen in patients aged more than 60:

(1) Female, aged 65, disabled by dyspnœa for thirty years; bilateral lesions; no operation.
(2) Female, aged 63, with dyspnœa and cyanosis for fifteen years; no operation.
(3) Female, aged 66, with pain in the back. Discovered at routine radiography; no operation.
(4) Female, aged 63, with symptoms since childhood. Died at operation.

Summary

A man who died of coronary thrombosis, and was known to have had a cough and hæmoptysis without other disturbance, was found to have a small cavernous hæmangioma of the lung.

The photograph is by the photographic section of the Royal Society of Medicine.

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PHOTOGENIC EPILEPSY INDUCED BY THE PATIENT

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IT has long been known that photic stimulation may precipitate convulsions in persons of epileptic constitution. The earliest recorded method was that used by the ancient Greeks when selling slaves in the market (Temkin 1945). The potter's wheel was rotated in front of their eyes. In some the intermittent occlusion of the sunlight caused vertigo and occasionally a seizure. In recent years this phenomenon has been used as an activator of epileptic discharges in patients undergoing investigation by electroencephalography. The source of light is a high-powered stroboscope in which the frequency of the flash can be altered (Walter et al. 1946, Gastaut et al. 1948, Gastaut and Gastaut 1949). Bickford (1948) studying normal subjects by photic stimulation, noted that in 92% of people the occipital frequencies could be "driven"—that is, the frequencies followed the rate of flashes produced by the stroboscope. In many there was an associated subjective sensation of colour which was not unpleasant. Abnormal discharges, mainly slow and limited to the occipital region, could be produced in some; and in a few there was evidence of paroxysmal discharge of the whole cortex.

It seems remarkable that some epileptics, particularly children, should have discovered these facts by chance, and subsequently should have found themselves compelled to induce epileptic episodes in themselves by producing flickering-light stimulation (Rail and Money 1953, Bickford et al. 1953, Robertson 1954). We report two further cases in which epileptic attacks are initiated by self-induced photic stimulation.

Clinical Records

Case 1.—A girl, aged 7 years, was first referred to one of us (J. H. H.) on June 13, 1956, for an opinion as to the nature and significance of an odd "habit" which her parents had noted with increasing concern. This was described as a rapid "flicking" of her left hand, with fingers held wide apart, in front of her eyes. She always faced towards the sun to do this and never performed on dull days. When she started to "flick", her eyelids blinked synchronously. After a few seconds she became motionless and "her eyes go blank as if she was not there". Then she staggered or stumbled. On occasions she had fallen down, and once scratched herself severely by falling into a rose-bush. The loss of consciousness lasted for only a few seconds, and immediately after the episode "she is back to normal". She induced attacks only with her left hand, though she was naturally right-handed. Her parents had never noticed any spontaneous mental lapses. The child's "habit" had first been noted about a year previously. About that time she had been taken to an ophthalmologist because of a concomitant convergent strabismus. For purposes of examination her pupils were dilated with atropine. This experience upset her considerably; but unfortunately the parents cannot be sure whether the "habit" started before or after this episode. The mother maintained that she could tell if the child had been "flicking" a lot as at these times she was irritable.

She was an only child. Her birth was uncomplicated, and she had had no serious physical illnesses. The parents, both very intelligent if fussy people, described her as always having been an excitable and very determined child, who was noisy and over-active and chattered endlessly. She ran rather than walked, strove to be the centre of attraction, and had never had any special friends. Her only fear was of dogs.

There was no family history of epilepsy. When the child was 5 months old, her mother had a schizophrenic episode which required 8 months' treatment in a mental hospital; she responded well to insulin therapy and there had been no recurrence. From the beginning of this illness a nanny took over the care of the child, continuing until March, 1956—i.e., until after the onset of the "hand-waving". The small private school which she attended describes her as impulsive, erratic, and lacking in concentration. The staff and her class-mates had frequently commented on her "habit" and had made unsuccessful attempts to stop it, as had her parents. She once protested to her mother: "I just have to do it."

Clinical examination did not reveal any sign of organic disease; she was a big, well-developed girl. At the first consultation her general behaviour and demeanour were grossly abnormal. She flitted around the consulting-room, apparently ignoring the physician, picked up various objects lying about, and made comments about them without showing any real interest. She forced on the onlooker the first impression that here was a spoiled, ill-mannered, and irritating only child.

Electroencephalography (E.E.G.).—The resting record was not normal for a girl of her age. There was little evidence of a repetitive frequency, but there was a wide range and abnormal bursts of high-voltage spikes, mainly in the occipital region. There was no asymmetry (fig. 1*a*). Stroboscopic activation at 15–16 flashes a second produced a clear attack of atypical spike and wave lasting for 2–3 seconds (fig. 1*b*). Activation at 3 flashes a second had no such effect.

Psychological testing showed her to be of superior average intelligence. During the test she was tense, distractable, and easily startled by noises. On visuomotor tests (Bender-Gestalt) some spatial disturbance was revealed by the transposition of the designs from the horizontal to the vertical. Projective tests (thematic apperception and children's apperception tests) showed good general orientation, and no evidence of psychotic trends. Her responses gave the impression of a child living in an emotionally cold world. The Rorschach test revealed strong compulsive tendencies, and there was a suggestion that her intellectual performance was not up to her capacity. Her behaviour in the initial play-interviews was succinctly described by the psychotherapist as identification with the "horror" girls featured in comics, whose adventures she followed avidly and retold with gusto. In short, she was boisterous, provoking, and exhibitionistic. In these sessions the "flicking" had frequently been observed, and during the first week of October two petit-mal attacks arose spontaneously.

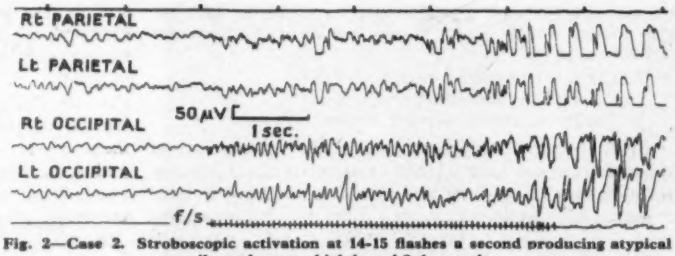

Fig. 2—Case 2. Stroboscopic activation at 14-15 flashes a second producing atypical spike and wave which lasted 3-4 seconds.

Treatment.—After the E.E.G. she was given troxidone 150 mg. thrice daily from June 25, 1956. Even when the dose was doubled, this drug was without obvious benefit. Early in September, 1956, she was found unconscious in the garden one very bright morning, and she remained in coma for 2 hours. A few days later she had a similar but shorter episode. It is not known whether these attacks were precipitated by "flicking". On Sept. 19 troxidone was stopped and chlorpromazine 25 mg. and primidone 125 mg. thrice daily were begun. Neither these drugs nor the use of rose-tinted spectacles had any appreciable clinical effect. Psychotherapy resulted in pronounced improvement in her general behaviour, but it did not reduce the frequency of the "flicking".

Case 2.—A girl, aged 11 years, was admitted to hospital on Aug. 21, 1956, because she had been found unconscious in her garden with generalised twitchings of both arms and legs. This convulsion lasted about 5 minutes and was followed by a period of unconsciousness which was coming to an end by the time she reached the hospital. 6 weeks previously she had fallen down unconscious; she did not twitch in this attack, which lasted only a few minutes.

Her parents related that about a year previously, when the family were living in Persia, they had first noticed that the child had developed a peculiar mannerism. This was obvious only when there was bright sunshine and when she was out-of-doors. She rapidly waved her right hand, the dominant one, to and fro before her eyes, at the same time turning her face up towards the sun. She then "appears to go into a trance". On bright days she repeated her habit again and again. She first fell down 6 weeks before admission to hospital. When her mother reprimanded her, the child said: "I can't help doing it." Her mother added: "She gets nasty if I try to interfere."

The child's birth had been uncomplicated, and she appeared to develop normally. She was pot-trained from the age of 11 days. After her 5th birthday she had a series of exanthemata, and also acute nephritis for which she spent 7 months in hospital. There, according to her mother,

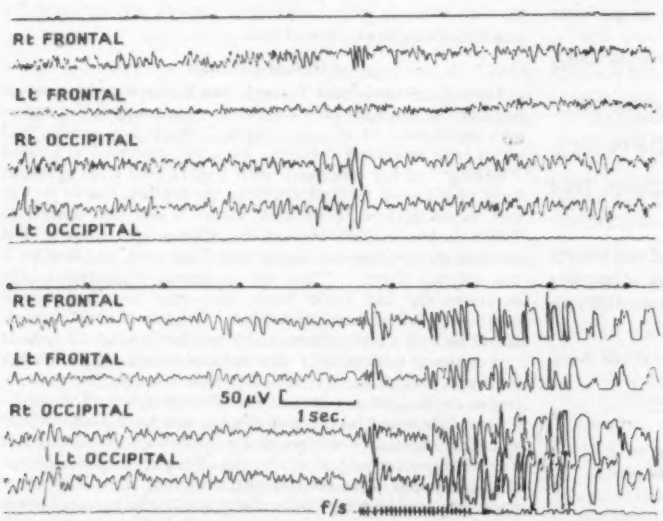

Fig. 1—Case 1. (*a*) Resting record showing wide range and abnormal bursts of high-voltage spikes mainly in occipital region; (*b*) Stroboscopic activation at 15-16 flashes a second producing atypical spike and wave lasting for 2-3 seconds.

she was "spoiled", and subsequently became bad-tempered and selfish at home, though by contrast absurdly generous to strangers. Menstruation began in August, 1955, but she had not had a period since May, 1956.

There was no family history of epilepsy. Her young brother, aged 9 years, was in good health. On her own admission the mother was over-protective with both children, and more attached to the boy. The schoolteacher described the patient as quite intelligent but very highly strung; she was backward in all subjects, especially arithmetic, and cried easily if reprimanded. At home she was often anxious about her schoolwork, and if worried went off her food. It was extremely difficult to establish rapport with this mother, who once spontaneously confessed to feeling "cut-off" from people. This rather suggests a schizoid personality.

Clinical examination revealed no signs of organic disease. The patient was a thin, cooperative child who showed apprehension whenever her "habit" was mentioned.

Electroencephalography.—The resting record was normal with a well-sustained basic alpha rhythm at 10 cycles a second. Hyperventilation made little alteration in her record. Stroboscopic activation at 14–15 flashes a second produced an atypical spike-and-wave abnormality, but only when the activation had lasted for 3–4 seconds (fig. 2).

Psychological testing was carried out during the child's short stay in hospital. She was very tense and showed little perseverance. Her intelligence rating was low-average. There was no evidence of any visuomotor disturbance. In the projective (thematic apperception) test most of the themes which emerged were concerned with failure or the loss of treasured possessions. She was a slim, rather angular child with small regular features and fair colouring. The movements of her head and limbs tended to be rather jerky. A slightly agitated manner revealed her anxiety in the early sessions, but there was, if anything, less shyness than is usual in a girl of this age. In fact, this social precocity gave an initial impression of higher intelligence than she possessed. In the first psychiatric interview, after recounting something of her life in Persia, she was asked why she was in hospital and explained curtly: "I wave my hand." Further questioning elicited the fact that this produced a dreamy feeling, and sometimes fits. "I don't like fits; I fall asleep and it takes me an hour to recover." She admitted that she always had dreams during postictal sleep but would not discuss their content. She was emphatic that she never dreamt during ordinary sleep. There was no indication that she was upset at returning home from abroad; but a suggestion that she might be worrying about something precipitated a bout of weeping, and with obvious distress the child told in vivid detail how, while she was abroad, one of her favourite horses at riding-school had injured a leg and had to be shot. On her first visit as an outpatient she was again unsure of herself, and her anxiety was revealed in a blinking tic of the right eye and in curious stereotyped movements in which corresponding fingers of her two hands were successively opposed. This did not happen subsequently. In contrast to the child's customary self-possessed if superficial play and chatter was the gay abandon with which she participated in a game of catch-ball, running and laughing, playfully aggressive and teasing by turn. Clearly revealed during these activities was a slight but definite exaggeration of all her movements as if antagonist muscle action was not quite synchronous. Even her smile was exaggerated and slow to fade. There was no actual motor incoordination. She was not observed "flicking" her hand either in hospital or at the clinic. A superficial relationship was established easily but did not develop.

Treatment.—After the E.E.G. she was given troxidone 150 mg. thrice daily from Aug. 29. Neither this drug nor the use of rose-tinted spectacles had any appreciable clinical effect. Psychotherapy has proved difficult and, hitherto, somewhat unproductive.

Discussion

Both these girls have discovered for themselves the trick of inducing seizures by hand-waving against the sun, and despite criticism continue to do so at fairly short intervals. It is interesting to note that an effective rate of stroboscopic activation is around 15 flashes a second, which is a rate that can just be achieved by rapidly waving the five fingers of one hand. It is almost certain that, in both cases, seizures arose spontaneously only after being induced. Both girls may be considered to have "idiopathic" epilepsy or a striking constitutional tendency to seizures. That there is a certain compulsive element in the inducing seems fairly clear from the children's own comments, and in case 1 the child's actual enjoyment is revealed by her remarking during photic stimulation by the stroboscope "that was great", as she squirmed with excitement. That this kind of auto-stimulation might be analogous to masturbation had occurred to both sets of parents, but there is no convincing evidence for or against this analogy. Again, it is curious that each child invariably "flicked" with the same hand, in one instance the dominant one. If this has any significance it may suggest a compulsive ritual, or perhaps a neurophysiological explanation should be sought, in that one half of the visual cortex might be the more sensitive to photic stimulation.

When we come to consider the personalities of the patients the first impression is that, apart from both being reasonably intelligent, they have very little in common—certainly this is true of their manifest behaviour. In case 1 the distorted parent-child relationship is of itself sufficient to account for pronounced emotional disorder in the child without invoking "epilepsy" at all, except inasmuch as the child's early behaviour must have modified later parental attitudes. In case 2 also, the mother-child relationship is coloured by gross over-protection, and it is not very surprising to observe in the child signs of anxiety and insecurity. In both cases, therefore, environmental and constitutional factors almost certainly operate.

We have no completely convincing explanation for the time of onset of the "flicking" habit, though it is possible that the impending loss of a nanny in the one case and of a beloved animal in the other may have amounted to situations of emotional stress or conflict.

Treatment by drugs, rose-tinted lenses, and psychotherapy has not as yet met with any conspicuous success. However, we have not yet exhausted the possibilities of a "trial-and-error" approach, and we intend to follow up carefully the progress of these patients.

Summary

The cases of two girls are reported in which epileptic episodes were induced by photic self-stimulation of a compulsive nature.

The diagnosis was confirmed by electroencephalography. Psychological techniques were used in the assessment of personality.

Treatment by physical and psychological methods has proved unrewarding.

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Preliminary Communication

A NON-TOXIC COMPLEX FROM PASTEURELLA PESTIS WHICH IMMUNISES BOTH GUINEAPIGS AND MICE

THE following cardinal facts emerge from the extensive literature on immunisation against plague in experimental animals and in man:

1. Mice can be effectively immunised against plague by dead vaccines, but only low-grade immunity is produced in guineapigs by such vaccines.[1]

2. Guineapigs (and mice) are effectively immunised against plague by living attenuated vaccines.[2]

3. The use of living attenuated vaccines in man was prompted by the cogent argument that man should have the benefit of antigens which immunised both mice and guineapigs.[3–4]

4. Mice could be effectively protected by fraction I,[5] the non-toxic envelope substance obtained from saline extracts of acetone-dried *Pasteurella pestis*. This fraction, however, had a much lower protective effect for guineapigs. Some protection in guineapigs was afforded by the so-called "residue antigen" which had a small protective value for mice. The "residue antigen" was that left after extraction of acetone-dried organisms with saline; it appeared to consist of 70–75% of the whole organism.

5. The use of fraction I for immunising man suffers from the possible disadvantage of the low-grade effect observed in guineapigs.

6. Vaccines prepared from whole dead *Past. pestis* are toxic, and this limits the quantity that can be injected.

In view of the efficacy of living vaccines in guineapigs, we examined first the protective activity, in guineapigs and in mice, of fractions obtained from large quantities of *Past. pestis* separated from guineapigs dying of plague. These studies demonstrated the presence in such organisms of a non-toxic complex which immunises both guineapigs and mice. Later a similar complex was obtained from certain cultures in vitro.

OBSERVATIONS

Our method of collecting *Past. pestis* from infected guineapigs has been described elsewhere.[6] An aqueous suspension containing 1×10^{10} per ml. was treated with ultrasonic waves for one hour at 3°C. The soluble extract, which killed both mice and guineapigs when injected intravenously, constituted about 70% of the whole organism. It would not actively immunise guineapigs in a test similar to that described in the table, and in mice was too toxic for an adequate test to be made.

The residue from ultrasonic treatment was resuspended in water and subjected to ultrasonic waves for an hour at +3°. After removal of the supernatant, which contained very little soluble material, the procedure was repeated. The twice-washed residue contained no intact *Past. pestis* when examined microscopically and in the electron microscope. It constituted about 30% of the whole organism and dissolved almost completely when treated with ultrasonic waves in 0·05*M* $NaHCO_3$ or 0·02M tris(hydroxymethyl)-aminomethane at pH 8·5 or 8·7 respectively. It was examined in toxicity and active-immunity tests with mice and guineapigs at a concentration equivalent to 1×10^{10} organisms per ml., either as a suspension in saline solution (heated at 60° for an hour) or as a solution in 0·05*M* $NaHCO_3$ buffer at pH 8·5 (filtered through 'Millipore'). Each preparation proved harmless to mice and guineapigs in doses of 0·5 ml. intraperitoneally and 5·0 ml. subcutaneously respectively. The successful results of active-immunity tests in mice and in guineapigs are shown in the upper half of the table.

IMMUNISING ACTIVITY FOR GUINEAPIGS AND MICE OF THE RESIDUE AFTER ULTRASONIC EXTRACTION OF *Past. pestis*

Source and form of the residue*	Guineapigs (500 g.)		Mice (20 g.)	
	Quantity* injected (ml.)	Survivors/ no. injected	Quantity* injected (ml.)	Survivors/ no. injected
L37 grown in vivo:				
(*a*) Solution in 0·05*M* $NaHCO_3$	5·0	5/5	0·1	16/20
	1·0	5/5	0·01	2/20
	0·1	4/5	0·001	1/20
(*b*) Suspension heated at 60°C for 1 hr.	5·0	15/15	0·1	13/20
	1·0	12/15	0·01	8/20
	0·1	4/15	0·001	3/20
L37 grown in vitro†:				
Suspension heated to 60° 1 hr.	5·0	5/5	0·2	8/10
	1·0	5/5	0·1	10/10
	0·1	4/5	0·01	6/10
			0·001	0/10
Tjiwidej, grown in vitro†:				
Suspension heated to 60° for 1 hr.	5·0	5/5	0·2	9/10
	1·0	4/5	0·1	—
	0·1	2/5	0·01	6/10
			0·001	2/10
	Controls	0/20	Controls	0/20

* Suspension of *Past. pestis* (1×10^{10} per ml.) subjected to ultrasonic waves. The washed residue (about 30% of whole organisms) was suspended in saline or dissolved in 0·05*M* $NaHCO_3$ to the original volume.

† Virulent L37 and avirulent Tjiwidej strains grown at 37° in the medium described by Davies [7] and harvested at 20 hr.

Active immunity test—2 subcutaneous injections of protective antigen with a two-week interval—challenge after one week with approximately 100–1000 L.D. of *Past. pestis* (strain L37).

A solution of the well-washed, lipid-containing residue in 0·05*M* $NaHCO_3$ at pH 8·5 showed one precipitation line on Ouchterlony diffusion plates [8] against plague antiserum; this line was common with that produced by the freely soluble fraction I isolated as described by Baker et al.[5] When serum was used, absorbed with an avirulent organism to detect virulence antigens as described by Burrows and Bacon,[9] the solution of the residue also formed a line of precipitation. The relation of these lines to one another and to those virulence antigens previously described [9] is under investigation. In this connection, it is relevant to mention that the solution of the residue in bicarbonate buffer prevented the phagocytosis of *Past. pestis* by guineapig polymorphs; fraction I and the virulence antigens have already been associated with phagocytosis resistance.[9 10]

COMMENT

It appears that the residue from ultrasonic treatment is a complex containing fraction I, a virulence antigen, and at least one other lipid-containing component. We suggest that *Past. pestis* has a cell-wall complex containing lipid, to which fraction I is attached firmly near the cell wall and loosely in the body of the envelope. The same state of affairs probably exists with respect to the virulence antigens. This cell-wall complex with the attached envelope can then be regarded as the best antigenic material for the protection of all species. If it is split by autolysis, acetone drying, and to lesser degree by washing or treatment with ultrasonic waves, then the components lose some of their protective power. This loss may be more apparent in some species than in others, as evidenced by the different protective power of free fraction I for mice and guineapigs.

The protective complex, first recognised in *Past. pestis* grown in vivo, may form the basis of an efficient dead

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6. Keppie, J., Smith, H., Cocking, E. C. *Nature, Lond.* 1957, **180**, 1136.
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vaccine for man. Thus it is relatively non-toxic; it has been obtained in a soluble form which can be filtered sterile and freeze-dried, and, unlike previous dead vaccines, it immunises both guineapigs and mice.

The practicability of such a vaccine depended on *Past. pestis* forming a similar complex under certain conditions in vitro, and recently we have found this to be so. Thus, suspensions of similar ultrasonic residues obtained from cultures of the virulent L37 strain and the attenuated immunogenic Tjiwidej strain, were similarly non-toxic and actively immunised guineapigs and mice (see lower half of table†). Such preparations, used alone and with added free fraction 1, are being investigated as practical vaccines against plague.

Our thanks are due to Mr. K. Witt for excellent technical assistance.

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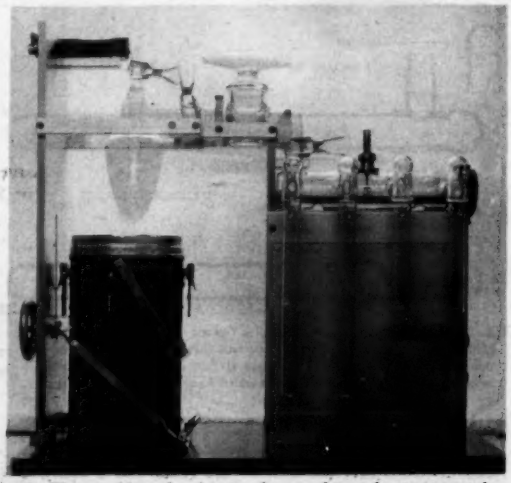

Fig. 1—The machine, showing two long and two short artery tubes plugged into the manifold, on top of which is the plunger for lifting the lid of the phosphorus-pentoxide boat. Beneath the manifold, hidden from view, is a Pirani gauge. On the left the Dewar flask is ready to be raised to cool the condenser.

New Inventions

A MACHINE FOR FREEZE-DRYING AND STORING TISSUES UNDER ASEPTIC CONDITIONS

THIS machine (fig. 1) was developed to eliminate the imperfections and to overcome the disadvantages of existing apparatus. It was designed especially to avoid the risks of bacterial contamination by carrying out in a single tube with an uninterrupted vacuum the whole process of freeze-drying, desiccation in vacuo over phosphorus pentoxide, storage, and eventual rehydration.

Apparatus

The main body of the apparatus consists of a cylindrical manifold with eight ports into which the artery tubes are fitted (fig. 2), but it is to the design of the artery tubes that the machine owes most of its originality. Fig. 3 shows the detail of one of these tubes ; the ground-glass joint of cap and tube is in effect a wide-bore tap because, by turning the cap, its port can be made to coincide with the corresponding aperture in the ground-glass surface of the tube.

The eight ports for the artery tubes are ground-glass sockets into which fit the side arms on the caps of the artery tubes. One end of the manifold leads via a wide-bore tap to a conventional vapour condenser and thence to the pump. To avoid dangerous mechanical strains the various articulations are effected by spherical instead of the usual conical ground-glass joints. At the other end of the manifold there is an easily removable brass closure which gives access to a boat containing P_2O_5 with a closely fitting ground-glass lid to protect the desiccant from water vapour during the initial stages of freeze-drying. This lid can be lifted from the P_2O_5 boat, without disturbing the vacuum, by means of a plunger mounted in a vacuum-sealed shaft on the top of the manifold (fig. 2).

Method of Use

Arteries are removed from the donor with full aseptic precautions. After being cut into suitable lengths, cleaned, and washed with streptomycin solution to counteract possible coliform contamination during agonal bacteriæmia, they are threaded on plastic formers and placed in the previously sterilised artery tubes. One tube serves as a bacteriological control. If it is inconvenient to begin lyophilisation immediately, or if only a short time has elapsed between death and the taking of the arteries, and agonal vascular spasm has not yet relented, the tubes are part-filled with sterile saline solution containing streptomycin and are immersed for a few hours in ice and water in the Dewar flask. During this stage the contents of each tube are kept sterile by a glass cap that seals the open end of the side channel in the top of the tube (fig. 3).

To prepare for the freeze-drying the saline solution is poured out and the tubes are placed in a CO_2-alcohol freezing-mixture in the Dewar flask until the tissues are hard-frozen; the tubes are then transferred to the machine.

The freezing-mixture in the Dewar flask is now used to cool the vapour condenser (fig. 1), and pumping is begun. The latent heat of vaporisation of water from the tissues is sufficient to keep them frozen. After 10–12 hours the tap at the end of the manifold is closed, and the lid is then lifted from the P_2O_5 boat.

The vacuum is checked from time to time, and, if necessary, pumping is resumed.

After four days desiccation is considered to be complete, and the artery tubes are sealed by rotating them inside their caps; to keep the side arms of the caps sterile they are in turn sealed by sterile glass caps fitting over their open ends. The tubes containing the dried tissues are stored at room-temperature and have been found to maintain their vacuum.

For the freeze-drying of bulky tissues fruit-bottling jars can be used after modification by the addition of ground-glass jointed caps as described above.

The body of the machine, when not in use, is kept sterile by formaldehyde tablets placed in glass stoppers plugged into the ports on the manifold.

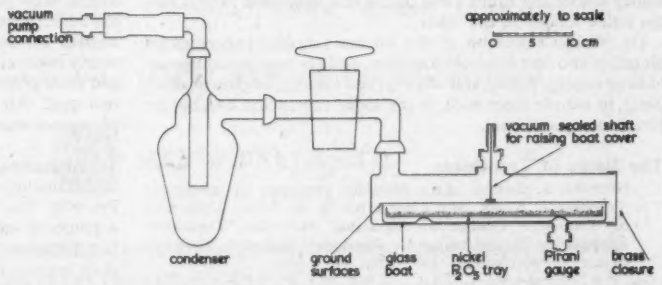

Fig. 2—Design of apparatus. Ports for artery tubes are not shown.

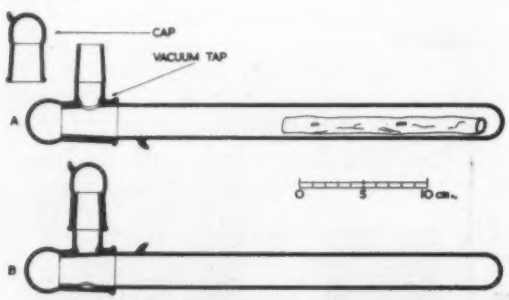

Fig. 3—Artery tube. Cap and tube form, in effect, a wide-bore tap. Rotation of cap to position A opens this "tap" for freeze-drying, and turning to position B seals it for storage. The second cap sealing the side arm in B is used to keep this channel sterile.

Reconstitution

When the tissues are required for grafting, the cap is removed from the side arm of the tube, and a sterile glass funnel is attached and filled with sterile Ringer's solution (fig. 4). The artery tube is slowly rotated inside its cap to allow the Ringer's solution to be sucked in. After 20 minutes the artery is removed from the tube, the side branches are tied, and it is ready for grafting.

Comment and Results

Bacteriological studies have confirmed that tissues processed in this way remain sterile. Macroscopically the arteries after reconstitution are indistinguishable from fresh vessels, and microscopically the only abnormality is pyknosis of the nuclei. They have proved satisfactory in use.

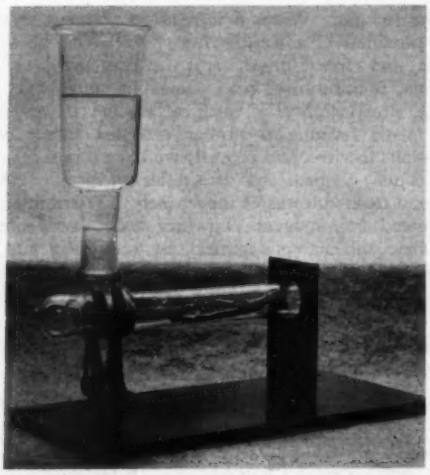

Fig. 4—To reconstitute the dried artery, a funnel containing Ringer's solution is attached to the side arm of the artery tube, and the body of the tube is rotated until the hole in the side of the tube and that in the cap begin to coincide, whereupon the fluid runs into the tube and is sucked into the tissue.

The apparatus depicted in these photographs was made by one of us (A. L.) for Prof. P. Santy at Lyons University. We are most grateful both to him and to Prof. J. H. Burn for their encouragement. We are indebted to Mr. E. L. Tugwell for the photographs.

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Reviews of Books

A Short History of Psychotherapy

NIGEL WALKER, PH.D. London: Routledge & Kegan Paul. 1957. Pp. 184. 25*s*.

CHAIRMAN of the Davidson Clinic in Edinburgh, Dr. Walker has written a workmanlike and readable summary of the development in theory and practice of modern psychotherapy. He reminds us in his introduction that this, like psychiatry itself, is not a science but a technique, and the importance of theory to those using a technique is that it should provide suitable explanatory models.

The modern semantic treatment of psychological illness is traced from Freud's earliest work on hypnosis, with a brief backward glance at Mesmer, through the period of "primitive psychoanalysis," when Freud was making his discoveries of the Unconscious and of techniques for exploring it. The work of Adler, of his modern successor, Carl Rogers, and of Jung is also outlined and the main points of theory and technique are described. Suggestion and conditioning, the only trends not derived from Freud's ideas, are given a chapter, describing the Nancy school and Emile Coué on the one hand, and Pavlov and the reflex school on the other.

Dr. Walker's account of the various schools is throughout objective and free from obvious bias, and his final summing-up of their relative merits and efficacy, and the type of patient most likely to benefit from each, is the more convincing because he pleads no special case.

The Bases of Treatment

NEUTON S. STERN, M.D., associate professor of medicine; THOMAS N. STERN, M.D., instructor in medicine, University of Tennessee College of Medicine, Memphis, Tennessee. Springfield, Ill.: Charles C. Thomas. Oxford: Blackwell Scientific Publications. 1957. Pp. 176. 36*s*.

IN framing effective treatment the doctor must have not only proper understanding of disordered physiology but also an imaginative appreciation of the psychological effects of disease. This book attempts to cover these important subjects; and fluid and electrolyte balance, diet, the comfort of the patient, and psychotherapy are among its topics. The chapter on drugs is largely confined to a consideration of digitalis and penicillin. Powerful new remedies may occasionally do harm, and the importance of iatrogenic disease is rightly discussed.

The book is written at an elementary level and is designed as an introductory course in the principles of therapeutics. Though the intention is sound, the execution is not always successful. The ever-present risk of over-simplification has not always been avoided, and we should have preferred a more critical approach to both the results and the limitations of therapy.

Extensile Exposure (2nd ed. Edinburgh: E. & S. Livingstone. 1957. Pp. 320. 45*s*.).—That there has been a demand for a second edition of Prof. A. K. Henry's now classic monograph will surprise nobody who has had the pleasure and benefit of reading the original. He is one of the happy few who can combine anatomy and surgery with artistry; and his highly individual style is displayed in vivid writing and subtle choice of words. Most of the original text has been left unchanged, but he has added a section on access at the second left costal arch, and another on the hypogastric route, so that the new edition is nearly twice as long as the first. Both new sections are rich fare, and there is now something for all—except perhaps the ophthalmologist. All surgeons should read the book. There is no pleasanter way of revising anatomy.

Hormones in Blood (Ciba Foundation Colloquia on Endocrinology. Vol. II. London: J. & A. Churchill. 1957. Pp. 409. 56*s*.).—Under the chairmanship of Dr. A. S. Parkes a group of scientists from Europe and the United States met last February to discuss circulating hormones, as opposed to their urinary fractions, analogues, or metabolic products. The papers have been edited by Dr. G. E. W. Wolstenholme and Miss Elaine C. P. Millar.

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Estimating Fœtal Maturity

ONE of the most difficult decisions the obstetrician is called on to make concerns the termination of pregnancy on account of severe toxæmia, cardiovascular disease, or other maternal disorders. If he interferes too early the fœtus may not be viable, but should he delay too long the mother's health may be endangered and the risk to the baby may also increase. When the date of the last menstrual period is uncertain the maturity of the fœtus may be estimated by clinical examination, but such estimates are notoriously inaccurate owing to individual variation in such factors as the level of the umbilicus and the thickness of the abdominal wall. An X-ray examination is sometimes requested, in which case the radiologist's opinion is usually based on the time of appearance of fœtal ossific centres or the size of the fœtal head; but no great accuracy has hitherto been claimed for this method. For example, ROHAN WILLIAMS [1] states that dates of ossification vary widely; he gives the time of appearance of the centre for the os calcis as between the 21st and 29th weeks, and that for the talus between the 24th and 32nd weeks. HODGES [2] devised a method based on the size of the fœtal skull; but the particular diameters required cannot always be measured, and in any case there are large biological variations in the dimensions of the fœtus in the second half of gestation.

Since 1949 HARTLEY,[3] in Manchester, has carefully studied thousands of antenatal radiographs, correlating all the known or subsequent information regarding the last menstrual period, date of delivery, appearance of the baby at birth, and, in many cases, postnatal X-ray examination. He has shown that the times of appearance of the fœtal epiphyses do not vary as widely as was formerly believed: for example, he has found that the centre for the os calcis appears consistently between the 24th and 26th week, while that for the talus appears just as regularly between the 26th and 28th week. His investigations have also exposed the fallacy of estimating maturity at a later stage of pregnancy from the appearance of the cuboid. He has shown how consistently the epiphysis for the lower end of the femur appears by the 36th week, and that for the upper end of the tibia at 38 weeks. Previous workers had based their estimates of fœtal maturity mostly on anatomical investigations which by their very nature could not be followed through to postnatal life and which were few compared with the potential material of a large X-ray department. When the X-ray department at St. Mary's Hospital, Manchester, was opened in 1949, very few patients were referred for radiological estimation of fœtal maturity; yet in 1956 this was the examination requested in 25% of 1000 antenatal cases. This indicates the demand for such information, and it is also a testimony to the value of HARTLEY's work. From the beginning he required a very high standard of radiographic technique, and this was the foundation of his success; for developing fœtal epiphyses are not easily seen, and they need a radiograph of the highest quality on every occasion. As a result of painstaking observations on thousands of patients HARTLEY can now estimate maturity in many cases to within a week, and a recent pilot survey showed that 77% of patients were delivered within 14 days of the estimated date.

Only two years ago HARTLEY's report would undoubtedly have inspired a greatly increased demand for X-ray estimations of fœtal maturity; but now the reception of his work may be modified by STEWART's [4] account of a possible association between antenatal X-ray examinations and leukæmia in infancy. The impact of her preliminary findings has been considerable: in one large city a memorandum, signed by obstetricians and radiologists, was circulated to all consultants and general practitioners recommending, among other restrictions, that "routine" pelvimetry and placentography should be stopped. Such examinations should never be regarded as "routine", and the memorandum may be more discouraging than its authors intended. As STEWART [5] remarked, "antenatal radiography should . . . continue to be regarded as a valuable and essential means of saving life, always provided that it is restricted to cases in which there is 'a definite clinical reason for referring patients for this examination'". WITTS [6] said: "we must balance the risks of X-ray diagnosis and therapy against their benefits . . . The possible 50 cases of leukæmia a year from X-radiation in utero must be set against 439 deaths of mothers in childbirth, 15,829 stillbirths and 9750 deaths in the first week of life in 1955. Obstetricians and radiologists believe that the mortality of mother and child may be significantly reduced by the appropriate X-ray examinations in pregnancy, and that they can save more lives than are likely to be lost from leukæmia."

Treatment of Breast Cancer

UNCERTAINTY has lately prevailed about the best treatment for breast cancer. After years of unquestioning loyalty to radical mastectomy, surgical peace of mind has been disturbed by MCWHIRTER's suggestion [7] that axillary metastases are better treated by irradiation without axillary dissection; and, since logic points to the futility of axillary dissection when no metastases exist there, what purpose can radical mastectomy serve? MCWHIRTER [8] has added to these arguments WANGENSTEEN's observation [9] that in 60% of cases with invaded axillary nodes, either supraclavicular or internal mammary glands were also involved, and neither of

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2. Hodges, P. C. *Amer. J. Roentgenol.* 1937, **37**, 644.
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4. Stewart, A., Webb, J., Giles, D., Hewitt, D. *Lancet*, 1956, ii, 447.
5. *ibid.* p. 1355.
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these groups falls within the scope of radical mastectomy as commonly practised today. Describing their technique for the excision of the internal mammary chain, HANDLEY et al.[10] reported invasion of these glands in 40% of their series of 57 cases (in 55 of which the primary lesion was in the inner or central part of the breast). MCWHIRTER computes that of 1882 cases seen between 1941 and 1947, for only 36% would radical mastectomy have been effective—for those without axillary-node involvement 22%, and those with axillary-node involvement alone 14%. On the other hand, 85% of cases were suitable for simple mastectomy and radiotherapy—namely, all except those with distant metastases (15%).

A strong challenge now comes from the Mayo Clinic [11] where 9649 patients were seen between 1910 and 1954, 9477 of whom were submitted to radical mastectomy alone, the rest to simple mastectomy. For the 1918 cases treated in 1941–47 the five-year survival was 59·3%, as compared with 48·1% in MCWHIRTER's group treated in the same period. BERKSON et al.[11] think it is reasonable to suppose that benefit may accrue from significant reduction by surgery of the cancer mass; they hold that the effects of treatment in this respect do not obey an all-or-none law and that inability to remove every cancer cell, including those which may be lurking in supraclavicular or internal mammary regions, cannot be regarded as therapeutic failure. Though they concede that axillary dissection might lead to dissemination, as MCWHIRTER suggests, they know of no evidence by which this factor may be assessed. They also doubt the significance of the improved results noted by MCWHIRTER in the group receiving simple mastectomy with postoperative radiotherapy between 1941 and 1945, as compared with those treated in 1930–1934 by radical mastectomy alone and in 1935–1950 by radical mastectomy and radiotherapy.[12] They are not convinced that the improvement was really related to treatment since they noted a persistent improvement in survival with each successive quinquennium in their own group —probably the result of earlier diagnosis and earlier surgery. From Birmingham also, where 4757 cases were seen between 1936 and 1949,[13] this same trend of improvement was noted with the progress of time. The 39·4% five-year survival-rate for the whole period at Birmingham only serves to emphasise the discrepancies between the various groups; for this includes all cases, even those untreated by surgery or radiotherapy, and is comparable with absolute survival-rates from 11 different centres cited by ROSAHN.[14] Comparison between the figures from the Mayo Clinic and those from Edinburgh is difficult since at the Mayo Clinic operative deaths have been excluded (though these were few, being 61 or 0·6%) and cases not operated upon were not recorded, whereas 257 inoperable cases were included in MCWHIRTER's results. ACKERMAN,[15] who had the opportunity of studying MCWHIRTER's 1941–47 cases, points out that in at least 220 ovarian sterilisation by irradiation was also performed in addition to simple mastectomy and local irradiation. The Birmingham results have both the advantage and the disadvantage of being more comprehensive, for each therapeutic technique and combination is considered separately in relation to the extent of the growth (by Manchester staging), and recurrences are recorded as well as survival-rates—an advantage since closer comparisons may be made, a disadvantage since the analysis is more complicated. From these figures radiotherapy associated with radical mastectomy seems to be more effective than radical mastectomy alone, as judged by five-year survival in stage 1 cases; on the other hand, a higher recurrence-rate followed the combination of deep X rays and surgery when nodes were involved—a peculiar equivocation that is hard to explain, just as it is hard to equate these conclusions with ROSAHN's finding either that five-year survivals are not significantly influenced by different methods of treatment or that various treatments influence survival statistics equally.[14 16] There is one humbling fact tucked away in the welter of Birmingham figures—only 4·2% of deaths were due to causes other than breast cancer.

10. Handley, R.S., Patey, D. H., Hand, B. H. *Lancet*, 1956, i, 457.
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19. *Brit. med. J.* 1864, i, 467, 495, 607.

Staphylococcal Infection in Infancy

STAPHYLOCOCCAL infection originating in maternity hospitals is such a common cause of death and disease that it would be better if only selected deliveries took place in hospital. This is the opinion of RAVENHOLT et al.,[17] who investigated infection-rates in mothers and babies from fifteen Seattle hospitals after they had returned home. 714 families were studied, and it was found that mastitis developed in 31 mothers (4%), and 125 babies (18%) had skin sepsis. 41 children born during the period under investigation died before they were 3 months old; 5 of these were proved to have died of staphylococcal disease. How long infection with the staphylococcus has been a problem in maternity hospitals, and how serious this problem is, cannot easily be estimated, because there are several forms of staphylococcal infection. In the first place there is the outbreak of sepsis, which follows a typical epidemic pattern and is usually controlled only by drastic measures such as closing the unit or wholesale prophylaxis with antibiotics. Secondly, there are the spots and sticky eyes which used to be considered quite normal in the newborn, and which still seem to arise at a fairly constant rate. The third type is the symptomless colonisation of infants with staphylococci; this has been shown to happen to nearly every baby by the time it leaves hospital.

Outbreaks of pemphigus neonatorum were described by RIGBY [18] in 1835 and by TILBURY FOX [19] in 1864, and both these workers recognised the contagious nature of the disease. Its staphylococcal origin did not become clear until the nineteen-twenties; at one time

it was thought to be syphilitic, and later was said to be caused by streptococci. But it was recognised as a definite clinical entity which occurred in epidemics. This comparatively clear-cut picture became confused when we began to find out more about the organism. Coagulase-positive staphylococci were isolated not only from the lesions but also from the nostrils of about 45% of healthy adults, 75% of nurses, and practically every baby over 4 days old. How could one hope to prevent staphylococcal disease when the organism was so widespread? The introduction of phage-typing has shown that there are some kind of tracks in this staphylococcal wilderness. In outbreaks of severe sepsis one particular strain, which may not be the most common one, is usually isolated from the lesions. The virulence of a strain cannot be safely assessed from its phage-type, but there has been at least one example of a particular type being associated with a capacity to cause disease. This is phage-type 80, which has been the epidemic organism in severe outbreaks in Australia, New Zealand, Canada, the United States, and Britain since 1953. Phage-typing has been used to find and exclude or treat carriers of the epidemic strain. This method is often successful; and ROUNTREE et al.[20] in Australia and GILLESPIE and ALDER[21] in this country have shown that some nasal carriers can be cleared of staphylococci with ointments containing antibiotics. The epidemic strains are nearly all resistant to the common antibiotics; and the more these are used, the more the resistant strains will be selected. The clinical form of the disease seems to have changed since the late war. Nowadays, pemphigus is uncommon; the virulent staphylococci seem to act on the deeper tissues, producing abscesses, cellulitis, meningitis, osteomyelitis, and pneumonia. Staphylococcal pneumonia of infants is being recognised more often, and its origin in maternity hospitals appreciated. This is a particularly deadly disease because diagnosis is difficult and the course rapid. HARLEY,[22] in Sydney, found that the average time between the onset of pneumonia and death was five days; of 19 infants with this disease, 7 died. He recommends that every case of pneumonia in a baby should be treated as staphylococcal until it is proved to have a different cause.

This then is the basis for the opinion of RAVENHOLT et al. They were particularly impressed by the danger of hospital-derived staphylococcal disease because they did not limit their investigation to the hospital nursery. They extended their studies by the simple (in America) technique of telephoning the mothers in the second month after delivery. A considerable amount of sepsis was found to have occurred after the mother and baby left hospital. An outbreak in one hospital nursery was followed by an epidemic of sepsis in the mothers and babies at home, caused by an organism of the same phage-type. How long these strains persist in the community is not known, but a finding by ROY et al.[23] of Toronto may be relevant. Antibiotic-sensitivity tests were carried out on staphylococci isolated from children admitted to a pædiatric unit. The incidence of resistant organisms was considerably higher in this group than in adults examined in other investigations. This, ROY et al. say, might be due to the persistence of organisms acquired in maternity hospitals. In this country mothers stay in maternity hospitals longer than the four days described by RAVENHOLT, so that relatively more staphylococcal infection will take place in hospital. He gives the median time for the development of sepsis as eight days for infants and fourteen for mothers, so we are less likely to miss the immediate post-delivery infections. Once the mother and baby have returned home there is little machinery for connecting any illness they may have with the hospital where the confinement took place. Staphylococcal disease is not notifiable, and the only follow-up is the routine post-natal examination of the mother and the visit of the health visitor to the home. It would be easy for an outbreak of hospital-derived staphylococcal sepsis to pass unnoticed. RAVENHOLT and LA VECK[24] in an earlier investigation wrote to twenty-six hospitals in Seattle-King county asking them about their experience of staphylococcal disease. They remark that "staphylococcal disease is a major problem in the better hospitals—the ones that have pathologists and good laboratories and a hospital-infection record-keeping system. Administrators of hospitals without such resources usually stated that they had no staphylococcal disease problem." Does this apply also to this country?

20. Rountree, P. M., Heseltine, M., Rheuben, J., Shearman, R. P. *Med. J. Aust.* 1956, i, 528.
21. Gillespie, W. A., Alder, V. G. *Lancet*, 1957, i, 632.
22. Harley, J. D. *Med. J. Aust.* 1957, ii, 673.
23. Roy, T. E., Collins, A. M., Craig, G., Duncan, I. B. R. *Canad. med. Ass. J.* 1957, **77**, 844.

Annotations

PROSPECT OF POWER

THE statements issued last week about the British and American work on the control of thermonuclear fusion reactions were wisely cautious. They were not, therefore, as exciting as some people had forecast: a new and abundant source of cheap power is not just round the corner. But there can be no doubt that remarkable progress has been made and difficulties have been surmounted which, a few years ago, seemed a complete bar to the extraction of power from this source.

To achieve a net gain in energy from the fusion of heavy-hydrogen nuclei (deuterons) it will be necessary to heat the gas to at least 100 million degrees Centigrade and probably more; and one of the enormous problems is how to control and confine the hot gas so that it does not melt and vaporise the apparatus containing it. So successfully has this been tackled that in the zero-energy thermonuclear assembly at Harwell temperatures of up to 5 million degrees have been recorded for as long as a few thousandths of a second. The smaller device, Sceptre III, at Aldermaston, has got up to about 4 million degrees. In the United States the Columbus apparatus at Los Alamos has produced temperatures estimated at between 3 and 5 million degrees for a few microseconds; and in another American machine, oddly named the Perhapsotron, neutron emission was consistent with a temperature of 6 million degrees during a pulse of 60

24. Ravenholt, R. T., La Veck, G. D. *Amer. J. publ. Hlth.* 1956, **46**, 1287.

microseconds. Details of these momentous results are recorded in *Nature* of Jan. 25.

One guide to the performance of ZETA and the other machines is the number of neutrons emitted while the current is flowing in the discharge tube. It has yet to be proved conclusively that the neutrons so far observed are the products of thermonuclear fusion. There is no doubt that each neutron is generated by the union of two deuterons to form a helium-3 nucleus plus a neutron; but the deuterons may conceivably have acquired the energy necessary for fusion by processes other than heating (such as acceleration by magnetic fields in the discharge). It should not be long, however, before this point is settled, and in Sir John Cockcroft's view it is 90% certain that ZETA's neutrons are true thermonuclear neutrons—in other words, that a thermonuclear reaction has been controlled and a great scientific milestone passed.

USE AND ABUSE OF DRUGS BY ATHLETES

OF drug addiction of any kind by athletes there is no evidence whatever in this country, and very little if any in the rest of the world, said Sir Adolphe Abrahams in opening a discussion, in London on Jan. 21, by the Society for the Study of Addiction. He was referring to a manifesto by the American Medical Association, at its convention last June, which denounced as shocking and vicious the use by athletes of the powerful drug amphetamine. Described as by far the most dangerous drug existing today, it can, said the Association, produce violent, rapacious, and criminal behaviour; by converting the ordinary athlete temporarily into the super-type, "pep-up pills" have accounted for the striking athletic records of recent years. Athletes, coaches, trainers, and officials indignantly repudiated this charge as ridiculous and without foundation. American drug manufacturers issued a declaration claiming that more than twenty years' clinical experience had demonstrated that amphetamine was one of the safest drugs in medical practice.

Amphetamine, although previously in use, came into prominence in the 1939–45 war as "energy tablets" given to the Armed Forces. Its recognisable effects were to postpone sleep, and to prolong the will to hang on and continue beyond the point at which fatigue would otherwise be overwhelming. It elevates the mood and often permits a disregard of physical danger. It creates euphoria—a feeling of exhilaration, an increase of confidence, and, as a result, an increased capacity for work; but, as R.A.F. investigators found, the quality of the work is not enhanced, and is in fact a little impaired. In saying that, save in the excitable or exceptionally intolerant, no ill effects have been recorded, Sir Adolphe was presumably speaking of single doses, not of the consequences of addiction.

He went on to remark that there will always be an ineradicable belief in the existence or discovery of some substance—food or drug—that has the property of increasing muscular efficiency and preventing or delaying fatigue. These potentialities have been accorded on the one hand to the simplest materials to be found on kitchen shelves, and on the other to secret concoctions reminiscent of the black magic of witch doctors. That effects can be produced is undeniable. That these effects result from any active properties in the material administered is a very different question. An athlete on the eve of competition is in a highly suggestible state, prepared to confide his well-being to the hands of anybody in whom he has confidence. Anything given with sufficient ceremony may be credited with remarkable capabilities, provided that the administrator has the right personality.

The Amateur Athletic Association have issued a rule that "drugs may not be used to produce better athletic performances"; but their request to the British Association of Sport and Medicine to make clear what is a drug demonstrates the difficulty of drawing a line where legitimate measures end and reprehensible practices—so-called "doping"—begin. No reasonable person would object to tea and coffee, although they contain caffeine. Alcohol has medicinal properties, and only convinced abstainers would forbid beer, brandy, and wine, which occasionally are of distinct benefit to athletes. Are we, asked Sir Adolphe, to refrain from the use of drugs that sharpen the appetite, improve digestion, and so contribute to physical wellbeing? Or from a simple sedative to ensure a good night's rest to an overanxious youngster on the eve of a contest?

It is a common experience that, in moments of stress or emergency, hidden reserves are called on to produce exceptional physical strength through the removal of inhibitions that Nature imposes as a protective mechanism—an index of the margin with which the human machine works. Are there drugs that can act in a similar fashion by diminishing sensitiveness, paralysing the consciousness of fatigue, the inhibitions that preserve us from overexertion, eliminating the functions of judgment and self-protection, while increasing the physical output? It is, doubtless, such drugs that alarmists have in mind when they condemn "doping".

Finally, said Sir Adolphe, if amphetamine and cortisone can directly release another reserve of energy, are they not to be accepted as contributing to normal physiological wellbeing? No criticism was heard of the use of oxygen in ascending Everest; if it were practicable to construct a tunnel with an oxygen-enriched atmosphere (66%) in which runners competed, record performances would be accomplished. If drugs can be isolated with a certain stimulating or inhibitory effect of advantage to athletes, with the guarantee that no immediate or ultimate harm is suffered, and fulfilling the ethical requirement that they be free from secrecy and universally available, what objection would there be to their employment? An uncomfortable feeling that it would be unsporting to employ an advantage that the giants of the past lacked?

SERVO MECHANISMS IN GENERAL ANÆSTHESIA

IN ether anæsthesia the blood-level of ether is constantly related to the electroencephalographic pattern.[1] Thus the depth of anæsthesia can be measured, and narcosis maintained by means of a servo device arranged to administer further doses of ether in response to changing cortical activity. Similar mechanisms can be used for other inhalational agents, and even for intravenous thiopentone.[2] Such machines operate intermittently, responding when the level of anæsthesia lightens sufficiently to trigger the mechanism. But Bellville and Attura [3] have now designed a servo system in which the "on-and-off" oscillation is eliminated. Their servo provides a continuous action which constantly readjusts itself and therefore maintains the patient as nearly as possible at an unchanging depth of anæs-

1. Faulconer, A., Jr. *Anesthesiology*, 1952, **13**, 361.
2. Bickford, R. G. *Electro-enceph. clin. Neurophysiol.* 1950, **2**, 93.
3. Bellville, J. W., Attura, G. M. *Science*, 1957, **126**, 827.

thesia. With such an apparatus the level of anæsthesia can be more accurately and more quickly determined than by clinical judgment, and the interval between appraisal and correction can be considerably reduced. Bellville and Attura consider that servo mechanisms will be of value to the pharmacologist, enabling him to study drug action at or near equilibrium conditions. The anæsthetist, however, is often concerned with the action of several drugs in one patient, and, as a human servo, must correlate many different responses from varying parts of the patient. The popularity of servo mechanisms is unlikely to mature in clinical practice, at least until they are complex enough to respond to several variables besides the electroencephalogram.

WATER

IN Britain the system of water-supply has been built up in fragmentary fashion by local initiative; and there are now in all 1250 water undertakings. The Metropolitan Water Board (probably the largest such organisation in the world) and the undertakings of Birmingham, Manchester, and Liverpool supply nearly a quarter of the population of England and Wales; and at the other extreme some very small undertakings supply only a few thousand people. Since 1945 Governments have been committed to a policy of re-grouping; but hitherto progress has been slow, since it has depended on voluntary schemes, and undertakings are, perhaps understandably, reluctant to negotiate for their own demise. The Water Act of 1945 gives the Minister of Housing and Local Government compulsory powers, but if these were widely applied progress would be even slower, since an order, if opposed, has to go through a special, very long procedure.

These facts are discussed in an analysis by P.E.P.,[1] which concludes that there should be comprehensive rationalisation and also greater coordination in all matters concerning water-supply, including pollution, drainage, and fisheries. Looking to the future P.E.P. finds a striking paucity of published information on water resources and likely demands. The total rainfall in Britain is, on average, about 130,000 million gallons a day. About half of this has to be allowed for evaporation and transpiration, leaving about 65,000 million gallons a day. Some of this must be left in rivers to provide a minimum flow; some may not be capable of economic development; and some may be polluted beyond reach of economic treatment. At present the public supply system makes available some 2500 million gallons a day, of which about 1600–1700 million gallons is taken by domestic and commercial users and about 900 million gallons by industry and agriculture. In addition industry uses amounts far exceeding those obtained from public supplies, but much of this is not consumed (e.g., cooling at electricity generating stations): probably, in all, some 2500–3000 million gallons a day is consumed, and well over 20,000 million gallons a day used.

In a forecast based on admittedly incomplete data P.E.P. estimates that the total of water supplied may be increasing by some 2% a year, without allowing for the increase inevitably resulting from slum clearance. The country has water enough: "The problem for the water industry is primarily an economic one of the capital costs of carrying water from areas of surplus to those of shortage, and of the costs of treating water which is available but in too polluted a state for normal methods of treatment." The water industry has responded by increasing gross capital expenditure from an average of £17 million in 1948–49 to an average of £39½ million in 1955–56; but "If the demand for water continues to increase, further investment will be necessary if shortages in public supplies are to be avoided." Other measures are possible. In the first place, economy in the use of water would help; and industry should not draw on supplies of pure water for purposes where water of lower quality will serve. Secondly, improved measures of treating water are allowing it to be taken nearer the mouths of rivers, rather than by using impounding reservoirs in the unpolluted reaches. Thirdly, in some parts it may prove possible to divert winter excess water into porous underground strata.

In this country, P.E.P. concludes, water resources are likely to suffice for foreseeable demands. But both rationalisation and extended capital expenditure are needed to make sure that it shall be available in the necessary amount and quality.

1. Policy for Water. *Planning*, Jan. 27, 1958. Pp. 15. 2*s*. 6*d*.

STUDY OF CHILDREN

WERE examples needed, child psychiatry would illustrate very well the fact that progress in medicine more and more depends on the collaboration of different kinds of specialist. For its practice the pædiatrician and the psychiatrist may require the help of the psychoanalyst, the educational psychologist, and the sociologist; and, on the level of theory, biology and ethology are making large contributions to the comprehension of child behaviour.

At the International Congress on Child Psychiatry, held in Toronto, it was felt that the need for a new body, devoted to the study of normal and abnormal development, had become imperative; and after lengthy preparation an Association for Child Psychology and Psychiatry was founded at a meeting in London on Dec. 5.

The most striking feature of the new Association is its interdisciplinary character; and its governing body, as well as its membership, will give equality of voice to all scientific and clinical workers concerned in child study. Membership is open to professionally qualified workers in child guidance and child analysis, and to professional persons in related activities. The Association will, we understand, not only hold meetings but also produce a journal in which discussion as well as reports will be encouraged.

Inquiries should be addressed to the hon. secretary, Mr. H. P. Hildebrand, PH.D., 8, Brondesbury Court, Willesden Lane, London, N.W.2.

A CHAIR OF DERMATOLOGY

THIS week the University of Durham and the United Newcastle upon Tyne Hospitals again advertise a combined whole-time appointment as professor of dermatology and consultant dermatologist. Their object is to foster research and clinical development in dermatology, and their initiative is most welcome. At present there is no chair of dermatology in this country, and at a time when the subject and its scope are being transformed by new discoveries and new ideas it is important that at least one of our universities should give its study the kind of opportunities that go with a whole-time chair. Many of the processes of disease are accessible on the surface of the body, and while therapeutic advances elsewhere are increasingly useful to the dermatologist, he has exceptional chances of making a reciprocal contribution.

Public Health

THE PLACE OF THE HOME-HELP SERVICE IN THE CARE OF THE AGED

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MOST old people look after themselves, perhaps with some supervision and interest from relatives and a variable amount of help from voluntary bodies. When all else fails, however, the local-authority services must accept responsibility for them, and nowadays the old are making ever-increasing calls on these services. The home-help organisation, in particular, has been strained by their demands. This scheme was introduced to assist domiciliary maternity cases and cases of emergency sickness in the home, and these two groups of patients must still be helped. The service is also used for educating problem-family mothers. But over the past few years in Sheffield it has become virtually a monopoly of the aged infirm.

Our efforts to help old people to remain in their own homes, or to return there as soon as possible from hospital, have resulted in making them increasingly dependent on the home-help service. They become unwilling to relinquish it, with the result that the number of new calls is greater than the number that can be removed from the list and the load continues to grow. What began as an emergency and temporary support has become the main prop for the care of the aged. In consequence the other functions of the service are being curtailed. Between 1952 and 1955 the number of chronic-sick cases more than doubled (rising from 737 to 1861), but the number of acute emergencies helped fell from 292 to 109 and the number of maternity cases from 187 to 132. It was therefore decided to review the organisation of the service, and assess its value to old people.

Results of Survey

In September, 1956, health visitors visited all the 732 households in a representative sector of the city, where old people were being assisted by the home helps. They inquired into the circumstances, environment, and health of the old people: no medical examinations were carried out.

Marital Status and Age

There were in the group 174 married couples, 84 widowers, 421 widows, 13 single men, and 40 single women (table I). In households where the husband is ill the wife usually manages to look after the home and her husband until she, too, is overwhelmed, and in these households our findings relate to the wife. Almost five times as many old women as old men were living alone—an expected result in view of women's longer expectation of life; old men left living alone are more likely to be admitted to hospitals and homes, or taken to live with relatives. Solitary men who wish to retain their freedom no matter what the cost in comfort are often found in common lodging-houses. In a recent survey in Sheffield * it was found that 86 of the 309 men living in common lodging-houses were over sixty-five. The number of women in common lodging-houses is negligible.

498 of the old people were living alone and of these 160 were over eighty.

TABLE I—MARITAL STATUS AND AGE

Age	Married couples	Widows	Single women	Widowers	Single men
90 years and over ..	1	6	—	—	—
80 to 89 years ..	38	136	4	33	1
70 to 79 years ..	88	221	25	46	3
Under 70 years ..	47	58	11	5	9
Total	174	421	40	84	13

Disabilities

All but a handful of those interviewed were seeing their doctor regularly, but only 14% were regularly visited by a home nurse. Since, in 1955, 54% of the visits of the home nurses were to patients over sixty-five, it was surprising that more of those using the home-help service did not use the nursing service too.

TABLE II

Incapacity	No. of cases	% of total 732 cases
Immobility due to		
arthritic conditions and joint involvements ..	194	
blindness	39	255	34·8
gangrene, varicose, ulcers, phlebitis, amputations, &c.	22	
Debility due to		
weakness, breathlessness, &c., related to cardiac disease	127	
chest conditions	49	
postoperative—e.g., cancer	30	221	30·2
anæmia	15	
Feebleness, dizziness, tremor, unsteadiness, &c., due to ageing of the cerebral arteries	189, 189	25·8
Incapacity due to		
depression, psychoneurosis, epilepsy	4	
other diseases	63	67	9·2

229 old people had poor vision and found reading difficult or impossible. Some were registered as blind or partially-sighted. 117 were very hard of hearing. Deafness is perhaps as distressing an affliction as blindness, but it does not interfere with the ability to do housework. Their other main disabilities were a compound of those degenerative changes and diseases which make up the syndrome of ill health so restricting to the activities and mobility of the ageing (table II).

Help from Relatives and Neighbours

Independence presumes ability to perform simple, multifarious, everyday tasks of the home. Half the old people did no shopping and two-thirds no laundering. Some sent their washing to the laundry, and any deficiency was made up by relatives, neighbours, and domestic helps. Duties undertaken by relatives and neighbours included washing and the heavier jobs such as carrying coal, decorating, and spring-cleaning. For 79 households cooking was done by relatives and neighbours. Only 38 were entirely without relatives; 514 had sons and daughters, but 185 had only brothers, sisters, nieces, or nephews. Regular visits and help from relatives were given in about half the cases. Neighbours in many cases provide help or lessen the loneliness of these old people almost as much as their relatives. There was a residue, however, who for one reason or another had to try to stand by themselves—one in three never saw any relatives; one in four had no help from relatives and neighbours, and one in six had no visits from them (table III).

TABLE III—HELP AVAILABLE FROM RELATIVES AND NEIGHBOURS

—	Help and/or regular visits received from:				Cases receiving:	
	Relatives		Neighbours			
	Help	Visits	Help	Visits	No help	No visits
Married couples	83	115	51	80	68	36
Widows	219	290	204	257	90	51
Single women ..	13	18	19	22	12	10
Widowers ..	45	55	45	45	16	10
Single men ..	7	8	5	4	3	2
	367 (50%)	486 (66·3%)	324 (44·2%)	408 (55·7%)	189 (25·5%)	109 (14·9%)

*Annual report on the health of Sheffield, 1955.

Hygiene

We found 48 old people who were living in dirty houses, 77 who were inadequately fed, and 89 showed marked lack of care. Some who had obviously lived on a poor diet for a long time professed to a poor appetite and no interest in food; growing disability, inadequate help, and loneliness had resulted in a general deterioration and loss of standards. A few were frail and confused and were in need of supervision and help, but we did not find much evidence of obvious mental deterioration. Probably this type of case is generally recognised as needing more regular care than can be given by a home-help or home nurse, and relatives assume responsibility or the patient is admitted to hospital.

The health visitors thought that 198 cases needed more help; that for 137 cases shorter and more frequent visits would be more useful, and that for 126 cases an evening visit was desirable.

Some Difficulties

Though it may seem at first sight that the old people get little help from those who might be expected to give it, there are many mitigating factors. In grouped dwellings neighbours themselves are old and dependent on outside help. Sons and daughters do not always live near by and may themselves be getting on in years. Daughters and daughters-in-law, who carry most of the burden, sometimes have considérable family responsibilities, may be working or be in poor health. Too often their task is a thankless one, for many old people become difficult and ungracious. There are thus ample reasons why the local authority is obliged to help.

Many difficulties are encountered in providing a domiciliary service. Sheffield employs about 300 home helps, full- or part-time, yet we are failing to meet all the needs of old people.

It is tempting to suggest setting up a register of people over sixty-five, who would be under regular supervision, so that wherever need existed it could be met. Apart from the fact that such a procedure would be resisted by many vigorous old people who are in no way disposed to have intimations of mortality thrust upon them prematurely, the cost of the labour force required would be difficult to justify.

Old people can all have medical care as a right, and home nursing at the request of their general practitioner: enough domestic help, a more general and nebulous commodity, cannot always be found for them; yet this is the king-pin of the care for the aged.

Kind of Help

The help needed by the elderly infirm in their own homes ranges from someone who will regularly spend a few hours doing the type of housework which necessitates kneeling or stretching, to someone who will pay daily visits and run through the gamut of duties such as would be undertaken by a solicitous relative. This will include washing, shopping, cooking, help with bodily cleanliness and simple nursing services. It may include advice on personal business matters, such as pension arrangement or payment of bills: in short, the home-help service must provide a comprehensive type of social service. Often the provision of help may be nothing but a form of delaying tactics against the day when an elderly person, who wishes to remain independent as long as possible, is taken to live with a married son or daughter, is obliged to ask for a place in an old persons' home, or when infirmity demands removal to hospital. Provided the help given is sufficient, the aim of promoting and prolonging an old person's independence is socially and ethically desirable from every point of view.

Recruitment

Home helps are largely drawn from the 12 million women in England and Wales between the ages of twenty-five and sixty-five. Many of the women in this pool are fully occupied looking after children and husband. Old people's homes, hospitals for the elderly chronic sick, canteens, light industry, and the distributive trades all compete for the type of woman suitable for the home-help service. This has been recognised by some authorities, who have given their home helps a status and conditions of service that attract the right type of women to take up the work, to some extent at least, as a vocation. Unless a home-help service sets out to be something more than a service of domestic charring, it will not only fail to meet all the needs of old people but will also be in constant competition with private households and hospitals which employ domestic help. A home-help service, if it is to become a real social service, must be able to attract women who are balanced and mature enough to handle the elderly with patience; who have enough intelligence and understanding to relate their behaviour to the process of ageing; and who can provide comfort and security as well as competent help.

Cost

According to the report of the National Corporation for the Care of Old People for 1956, to keep an old person at home when it is necessary to provide a home nurse, a full-time home help, and night service, will cost more than a hospital bed. Superficially it might seem uneconomic to provide a service for one old person in this way, but there is an analogy between the home help given on this scale for a limited period and the case of the seriously ill person who requires to be "specialled" in hospital. To provide a costly service indefinitely for an old person at home is, of course, another matter and would be economically impossible.

When comparing the cost of looking after an old person at home with hospital care, the average cost per patient must be used and not the cost for the exceptional case. In a sample of 200 of the 732 people in this survey only 18 were found to have home-nursing visits as well as a home help. The highest total weekly cost of providing home help and home nurse when both were visiting was £2 14*s*. 10*d*.—for an old person who had daily general nursing and a home help one full day per week. The lowest figure of 15*s*. 6*d*. was for a patient who had a weekly injection and the aid of a home help for one half-day per week. In the first example a bedridden person is being kept out of a hospital bed with the help of a home nurse, relatives, or friends, supplemented by a home help, and in the second the small amount of help given to an ambulant patient may well be the alternative to removal to an old persons' home.

The difficulty arises where the service is stretched too far in an attempt to cover all who have asked for help. It becomes inadequate with the result that the old person who is left without relatives and friends must inevitably be removed to hospital almost as soon as she becomes confined to bed. Thus of the 732 people in the survey only 30 were confined to bed or wheelchair, and it is obvious that a further number might have been kept in their own homes if the help had sufficed.

The cost of keeping an ambulant old person in a home for the aged is about £4 10*s*. per week, but the minimum sum of £1 12*s*. 6*d*. (under review at present) of this is recoverable from the old-age pension. It would therefore be economic to spend up to £2 10*s*. per week on domiciliary services to enable the old person to stay at home. Where the alternative is the more costly hospital bed, it would be economic to spend considerably more than this.

A Choice of Priorities

The question we are faced with is that of translating into reality our ideals regarding the care of the elderly in their own homes. The problem is not only one of reservations as to the cost but also the more serious difficulty of finding enough home helps of the right type, and it is not easy, when help is limited, to judge priorities accurately.

How far are we justified in diluting the time given to those who need it badly so that those whose need is less may share in a service to which they consider themselves

entitled? On the one hand we have long waiting-lists of old people who need home helps, and on the other the difficulty of recruiting home helps; a balance must be struck so that a reasonable, though perhaps inadequate, system of care can be provided. There must be a good cadre of well-trained home helps, since, even under supervision, they have to work out of direct control: but, owing to difficulties of recruitment, some less skilled workers must supplement the regulars. The original conception of the home-help service has had to be changed, and conditions and standards of training and remuneration must be improved so that the work is given a better standing; for, as we have pointed out, much is needed from the home help beyond the capacity to clean a room. The service can certainly no longer be haphazard in its organisation, nor can it hope to fulfil the needs of old people unless intelligent care and thought is given to each case and its work is supplemented by enlisting every possible source of help from relatives, friends, neighbours, and voluntary organisations.

Since the number of aged is increasing and the younger people who must look after them are slowly getting fewer in proportion, there is a strong argument for the assumption by the medical officer of health of the overall supervision of the aged as a group. The services and supervision which he is empowered to provide must match his awareness of the extent and nature of the need—in other words, it must be part of a social service and not merely a Domestic Help Scheme. It is already realised that all the efforts which can be made on behalf of the aged by voluntary bodies will be required, and the function of these groups cannot be taken over by the local authority. Nevertheless, preventive medicine in devising an intelligently conceived domiciliary service for the aged will have a chance of transforming their outlook in the years which must be lived on the debit side of life.

The views expressed are personal and not necessarily those held by the Sheffield City Council.

Food-poisoning

A new edition has appeared of the Ministry of Health's memorandum on food-poisoning.[1] The only major change since the previous edition [2] is that provision is now made for the reporting of cases ascertained by medical officers of health besides those notified by other doctors.

Vital Statistics for 1957

The Registrar General has issued provisional figures for England and Wales for 1957.[3] The birth-rate (16·1 per 1000) was the highest since 1949, but the death-rate (11·5) was not much different from that in the previous two years. The infant-mortality rate (23·0 per 1000 live births) and the still-birth-rate (22·4 per 1000 live and still births) were the lowest ever recorded in this country.

1. Food Poisoning: Steps to be Taken in England and Wales by Medical Officers of Health in the Investigation and Control of Food Poisoning. H.M. Stationery Office, 1958. Pp. 15. 1s.
2. See *Lancet*, 1949, i, 974.
3. The Registrar General's Weekly Return for England and Wales: week ended Jan. 18, 1958. H.M. Stationery Office. Pp. 20. 1s. 6d.

Special Articles

CARE OF THE MONGOL BABY

The First Phase

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THE birth of a mongol baby presents one of the most difficult and delicate management problems in family medical care. Mongolism is, it is true, only one of the many forms of "congenital defect", and the parents' reaction involves no new or different quality. What singles out this problem is, first, that it concerns mental defect, and, secondly, that if the presentation is vertex, the first look at the head and the face, before the whole baby is born, can reveal diagnosis and prognosis—the sadder because medicine cannot help.

Mongol babies are not all the same, but they are similar; they share appearance, stature, colouring, a happy character, a love of music and rhythm, and the ability to give and to inspire deep affection. While intelligence varies widely, and occasionally reaches the standard of the educationally subnormal, the range is as nothing beside the immense potentialities of the normal newborn babe, and full maturity falls short of independence in the complex of modern society.

Parents of congenitally defective children can usually accept at birth such internal disease as involves the gut or the heart. Anxiety there is, but compassion also, and the saving hopefulness that the doctor can generally give. External defects are harder to bear, because the child will be perhaps crippled or unsightly, but if the parents are given honestly and without delay the whole picture of what can be done and what cannot, after their grief they usually adjust themselves and rise to the occasion. Feelings of shame and guilt, or of retribution and punishment, are present in small degree, but where there is mental defect these feelings may well swamp compassion and substitute self-pity and a self-protective aggressiveness—understandable, forgivable, but making it hard for anyone outside to help.

These attitudes are usually modified by the quality of the particular parents—strength of character, emotional stability, insight—and by their experience of life. Intellectuality is, alas! a hindrance rather than a help. The mother is bound after her pregnancy and delivery to be not her usual self; nor is she expected to acquire her normal emotional tone for six or eight weeks at least. And no-one is likely to know really what hopes, joys, fears, or regrets have swayed her mind from the moment of conception, or whether the bonds of the family circle are such as will be strengthened or weakened by a family tragedy. The community assumes that parents welcome the knowledge of a pregnancy, want babies, and love and cherish them from birth. That some parents use contraceptives, successfully terminate pregnancies, or reject normal babies, is viewed with sympathy by society, which condemns infanticide and physical neglect, but recognises the instinct for rejection of parenthood in normal human nature.

* * *

Faced with the certainty that the new baby is a mongol, what is the doctor to do? Although there is no way of altering the baby's condition, the doctor should work towards securing for the baby the care and protection which will allow him to develop to the limits of his capacity. His needs in infancy are exactly the needs of the mentally normal baby: physical care and satisfaction in an atmosphere of love and security. To say that the mother at home and in her own family circle can provide these best, is to state an ideal. It is not always the truth, and the ideal cannot always be achieved. The mother and the father must be helped to accept the facts, helped to face them and their implications for the future, and helped to

think out their plan for the care of the baby. The doctor must watch, so as to avoid, or at least lessen, the dangers to the family structure that arise while the parents are adjusting themselves to their experience. It is not the duty of the doctor, any more than it is the duty of the grandmother, to impose the solution. Nothing can alter the fact that the parents have a mongol baby. Whatever the fate of the baby, this fact will remain a fact for the rest of time, and the parents must make their plan with a sense of this perspective, leaving no place for regrets.

Once the diagnosis has been made, the possible lines of action are limited. The extremes are to keep the baby at home as a normal baby and to await developments, or to dismiss and reject him, to write him off as a " dead loss " and to find someone else to look after him—in a foster home, a nursery, or an institution. What is politely called euthanasia has no place in the care of the mongol baby and his family. Fostering, with a view to a later return home, or home care, with a view to admission to institution or residential school at some selected age, form intermediate compromises.

If the parents fail to notice that the baby is not normal (and this is usual even when parents include a doctor or a nurse) it falls to the lot of someone at some time to break the news. That person ought in the first instance to be a doctor; but whether he is family doctor, obstetrician, pædiatrician, or mental-health specialist depends upon who is available at the appropriate time, and is less important than the sort of person that he is. Let him be one who feels deeply about this problem, deeply enough even to pray before the interview and to weep afterwards. But the more deeply he feels, the more need is there for him to have thought deeply too. Whatever words are spoken, however many the talks, there are two moments in time to be bridged—the last in which the parents look with joy at their new baby and his future and the first when they know his tragedy in their hearts. The doctor who tells the parents that their baby is a mongol is performing a surgical operation without an anæsthetic. Only in the spirit induced by this sort of realisation should the doctor proceed with his hurtful and dangerous revelation. Upon his wisdom, upon his ability to see the situation as a whole, and upon the acceptability of his approach to the parents, may depend the future happiness and integrity of the affected family. That he imparts a bias of his own to the course of events is inevitable, but there is no place in all this for the doctor who always recommends the same solution, whether it be immediate separation or its opposite; or for the outpatient teaching session or a three minutes' chat in the doctor's surgery or the welfare clinic; nor for those to whom the consultation is no more than a rapid exercise in clinical diagnosis.

* * *

The parents should be encouraged to return for further talks at leisure, and in many cases a trained social worker or a sympathetic ward-sister, midwife, or health visitor can help. The list of things that the parents want to know varies little. Firstly, they need to believe the diagnosis and to accept the accomplished fact. " What will the child be like, will he live, how does it happen, why did it happen to us, can it or will it happen again, is there anything that we can do, is there anything that anyone can do ?"

Acceptance and grieving form the first two stages of the healing process, and several expert opinions may be needed. Even then parents may appear not to accept the diagnosis. In some this is " putting a brave face on things ", in others it is a dangerous delusion. The doctor who has made his point need not keep driving it home, and patients cannot be compelled to be cured of this or indeed of any delusion that does not lead to crime. Attempts to alter facts through quackery or spiritual healing under whatever banner are reasons more for pity than for interference.

A description of the life-history of the mongol baby and child is most important. Parents who lack direct experience of mental defect imagine what they do not know, and their own picture may be grotesque and terrifying. On the other hand, a visit to a home where there are many mongols is seldom wise. The suggestion to see some affected babies or children should be left to the parents to make, and tea with a high-grade case will show the best that can be hoped. About a quarter die in the first two years but many live on, especially when there is no complicating congenital disease. Resistance to simple infection is less than normal, but the parents should not be led to believe that their child will die young.

The ætiology of mongolism remains unknown. The great similarity between cases in different families, stocks and races, suggests that this is a human variant arising in between one and three of every thousand live births, commonest when the mother is over 40 years, but seen throughout the childbearing period. There is no known factor in the medical history or habits of the parents, and bad luck alone accounts for why this, which is a common risk to all humanity, should happen to one family rather than to another. Nothing in the parents' lives could produce it; nothing could have prevented it. Second cases do occur apart from twin births, and the parents must be so informed. The risk is not altered by the birth of a mongol, and is neither greater nor less at the next pregnancy. Nevertheless, with parents under 40 years the remark should be added that in real life second cases are exceptionally rare and the risk is well worth taking, especially when the mongol baby is the firstborn.

That there is no specific treatment must be admitted, but it is wrong to tell the parents that they can do nothing. Recent study of mentally defective children has shown the important part played in their lives by emotional disturbance. The emotional stability, the happiness and the general progress of the mongol baby is observably better when the family has accepted and loved the baby. This is no reflection on nursing care in foster homes and institutions, but simply means that the well-known fact that in the first five years home life is best for children applies to mongols as much as to their mentally normal siblings. When parents neither accept nor love the mongol, home care is not the best.

Certain other problems should be raised. The effect on the siblings of the addition of a mongol baby to the family has to be watched. The rest of the family usually takes the lead given by the parents, and if they adjust well to the situation little trouble results. From time to time the progress and behaviour of the siblings should be considered, and in some families the best interests of the normals may lead to a change of plan. This is the more likely if the mother gets into the habit of fostering her mongol at the expense of the siblings, and parents should be warned of the danger of the mother's neglecting her husband, her other children, or her home by concentrating too much on the mongol. It is wise for the parents to let near relations and close friends know that the baby is a

mongol, that they have taken advice, and that the matter need not be referred to again.

* * *

The certainty of diagnosis that may follow the first look at the head of the part-delivered baby, referred to above, is responsible for the difficulty which surrounds the choice of time for revealing the fact to the parents. There is room for difference of opinion and of practice. If the baby is born at home, there is not the urgency that exists in hospital where the mother and baby normally go home on the tenth or the fourteenth day. A routine method of handling is to be avoided, but on the whole I prefer to do no more than sow a seed of doubt in the parents' minds before they go home. In this way the mother is given the chance to regain her emotional balance and to get really to know her baby. I arrange to see them again at four or six weeks on the ground that the baby's general condition and progress is not absolutely satisfactory. This conversation probably is wise, although at times it leads to a fuller revelation of the nature of the anxiety than was intended. The parents must never be told positively that a mongol baby is normal, or confidence between doctor and patient is lost for ever. Both parents must be seen at the second consultation, and at this or at the next, after a further one or two months, the full story should be told. Unfortunately during these intervals a kind friend, neighbour, or relation, or another doctor or health visitor, may have alarmed the parents by some ill-advised remark, and it is wise for at least the medical and social workers to agree their plan.

For the doctor to tell the father in the neonatal period with an injunction not to tell his wife is to put a dreadful strain on him, and reflects a singular idea of relations between husband and wife during their enjoyment of the new baby. Often, however, the father is prepared to break the news to his wife and then to let the doctor explain the meaning of the diagnosis. To tell the mother in the neonatal period before she has got to know her baby is again adding to the burden, unless the family situation is such that rejection of the baby seems likely to be the best solution. When the parents have realised the diagnosis themselves, the decision is out of the doctor's hands. One mother may utterly reject the baby in hospital and when the diagnosis is revealed in the first few days; she refuses to discuss it, seeming able to cut herself off successfully, though grieving privately. Another, out of the fullness of her maternal spirit, cannot even for a moment consider a parting. Such strong instinctive decisions are best left unchallenged.

When the mother decides to keep the baby and to see how he gets on, she should be advised not to close her mind against his ever going away. If he is very slow and limited the needs of the rest of the family may make it advisable; training and such schooling as is suitable may be possible only away from home, though this is less likely now that more occupation centres are opening. Multiplication of instances is not the purpose of this article; each situation has its own characters and the best solution has to be worked out afresh each time. The doctor can only help the parents to react well and try to persuade them that the birth of a mongol baby is not a defeat but a challenge to battle.

Medicine and the Law

An Unstable Piano

A SCHOOL music-teacher employed by a local education authority had her foot crushed by a piano while moving it in the course of her teaching duties at a special school for crippled children, carried on at the Ascot Orthopædic Hospital under sections 62 and 63 of the National Health Service Act, 1946.

The education authority provided teachers and the hospital provided accommodation and equipment, including the piano in question. It had originally been fitted with four one-inch-diameter brass castors at each corner and two wheels in the centre which made it easy to move from ward to veranda and back again. Some time before the accident the two centre wheels had been taken off and it became difficult to move. The school headmaster repeatedly asked the hospital to replace the wheels. On the date of the accident two hospital employees replaced the brass castors by four 3-inch-diameter wheel-castors in the hospital workshop, and took it back to the ward for the music lesson. While the teacher was moving it back to its proper place in the ward it tipped over and injured her.

She brought an action both against her employers (the education authority) and against the hospital management committee. Mr. Justice Stable awarded her £1013 against the hospital and dismissed her claim against her employers. The hospital committee appealed.

Lord Justice JENKINS said that this piano had had a long and blameless if somewhat nomadic career until its centre of gravity was raised by substitution of wheel-type castors for the old brass ones, thus making it top-heavy. It was highly significant that this accident happened on the very day of the alteration. If that was the cause of the accident, was there any breach of the duty owed by the hospital to the teacher? For the hospital it was argued that though the standard of care they owed her was higher than that of the donor of a gift to a donee, it was not so high as that of a manufacturer of goods who made and distributed them for reward. His Lordship did not agree that this was like a case where the work was done gratuitously. It was true that the piano belonged to the hospital and was lent without any payment to the education authority; but it was lent as part of the reciprocal arrangement between these two public bodies who together fulfilled the aims of education and medical treatment; and the duty of the hospital committee was to take reasonable care to see that the piano when fitted with the new castors should be reasonably safe. No-one who had heard this case could fail to appreciate that upright pianos were liable to tip over, and the higher their centre of gravity the greater the propensity to tip over. That was something which the hospital employees using reasonable care ought to have known and guarded against, and because they had not done so the hospital committee were vicariously liable. Their appeal must be dismissed.

As to whether the education authority was liable, this was not a case in which the employers provided plant in the shape of pianos or delegated their provision. These were simply pianos which the authority's employees were permitted to use, and it could not be said that when the piano owners caused new wheels to be put on they were altering plant on behalf of the education authority. True, the headmaster had asked for new wheels to be put on; but the education authority was not in control of the situation when it was done. The accident happened before the employers even knew that the new wheels had been put on. They could not in those circumstances be held liable. The claim against them must be dismissed and the hospital committee should pay all the costs involved.

Lord Justice HODSON and Lord Justice MORRIS agreed.

JOHNSON *v.* BERKSHIRE COUNTY COUNCIL AND THE WINDSOR GROUP HOSPITAL MANAGEMENT COMMITTEE. *Court of Appeal* (Jenkins, Hodson, and Morris *L.JJ.*); Dec. 5, 1957. Counsel and solicitors.—F. Beney, Q.C., and John Perrett (Gamlen, Bowerman, and Forward for Lovegrove & Durant, Windsor); E. S. Fay, Q.C., and P. M. Blomefield (K. Wormald); Montague Berryman, Q.C., and E. W. Eveleigh (Berrymans).

M. M. HILL
Barrister-at-law.

In England Now

A Running Commentary by Peripatetic Correspondents

"IT is just like a sort of outpatient department" said my learned colleague. The juvenile court was in session and we were observing from the rear. The longer I watched, the more I saw his point. There had been those dreary queues for a start, in a large dim hall complete down to the small wooden table in one corner serving warm tea. Even the stray coppers weren't out of place. The chief consultants were pretty obvious behind the Bench, and their juniors presented clinical problems to them in a competent manner: the conclusions were probably not much more didactic than those at most teaching hospitals. Once the three chiefs even withdrew for a private consultation on a problem case. Most cases were appropriately returned home for domiciliary care under the direction of the, as it were, court general practitioner—the probation officer. Some were declared fit and discharged, and a few, after some headshaking and study of specialist reports (including, happily, psychiatric opinions), were sent for special inpatient care at a specified place.

These parallels seemed for the most part happy ones: a therapeutic approach is making some inroads on our punitive judicial system. But there were differences too. The Press isn't admitted to our ward rounds yet, and the magistrate still has a very strict set of rules to follow. We haven't had these since Ancient Egyptian times. No, it's not for nothing that we talk colloquially of beaks "dispensing justice", but with due humility I would like to suggest that the legal eagles tear one more leaf from our book and initiate a series of carefully controlled trials. Where prognosis is so obscure, how can one have much confidence in the treatment?

* * *

In our industrial part of the world, one of the interesting sights of road travel are the chemical tank wagons, bearing in large red letters such exciting notices as DANGER, HIGHLY INFLAMMABLE, STRONG CORROSIVE. As one follows them it is interesting to revive one's rusty chemistry and think out what first-aid treatment would be needed if an accident occurred. But in fact their presence seems to have a good effect on road manners. It is striking to watch how the motorist who has been trying to pass everyone suddenly slows down when he reads the red letters which say DANGER. EXPLOSIVE.

* * *

She was rushed into hospital as an emergency and spent an hour and a half on the operating-table that same night. Thirty-six hours later she was asking me if there was anything new in the headlines of the morning paper. Then for a week or more she was very weak, and behaved like an old, old lady. She soon picked up again, and discussed with great interest her curious adventures in the half-world where she had searched in vain for death's door. Today I took her an offering of *Penguins*, ranging from D. H. Lawrence to the Venerable Bede, and she seized on them with delight. She handed me in exchange an article she had just written about Irish nurses, and asked me to get it typed and sent off to a Dublin paper. I looked through it later. The writing was shaky but the style was as lively as ever. There was only one slip; meaning to mention her birthday in 1958 she had put, "This has been written on my 158th birthday." If bodily wear and tear had not taken such a toll, it would be hard to find any logical reason why she should not still be writing on that anniversary. Mentally she's still in her forties, for all that she's turned ninety-five.

* * *

Since the man from the Ministry fell through the seat of our Senior Lecturer's chair some time ago the University has been turning over in its mind the desirability of allowing us to purchase some new chairs. The green light came last month, and we have all been breathlessly awaiting the arrival of our new Professorial Chair. Our Professor is not a man to throw away an opportunity of getting a decent seat for the first time in his medical career, and he has been happily studying the form in several highly coloured catalogues. On sordid financial grounds he was regretfully forced to leave out of consideration the 'Floating-Eez' (at the touch of a button instantly assumes any angle desired; the business man's dream; guaranteed for a lifetime), and the Executive's Chair (padded arm-rests and stout swivel mechanism; a solid job) seemed lacking in dignity. The Director's Chair (with foam-rubber seat and adjustable back; in blue, red, or green) was rather better, but our efficient administrator, who rules us in æsthetic matters, maintained that in her opinion the rest of the furnishings were not suited to admixture with primary colours. There was accordingly little choice in the matter, and our accommodating Professor was driven to turn his mind to those chairs which were obtainable in pastel shades.

Fortunately the Chairman's Chair (with foam-rubber seat, stout swivel mechanism, *and* patent adjustable tilting mechanism) came in grey or black, and this morning a grey one arrived in the hall, swathed in paper padding and secured at all points with string. We tiptoed cautiously round it, exploring the foam rubber, and examining the tilting mechanism; rather enviously we watched it borne away into the professorial sanctum. But mark the sequel.

It appears that our Professor was hospitably entertaining the Vice-Chancellor at morning tea when he conceived the injudicious notion of putting the Chairman's Chair through its paces for the benefit of his guest. The first tentative circuit of the stout swivel caused him to crack his patella viciously on a totally unexpected corner of his desk, and while expressing himself with some force on this occurrence he unwisely leant backwards, thereby bringing into play the patent adjustable tilting mechanism to such effect that the whole chair, complete with Professor, overbalanced backwards, causing him to strike his head a savage blow on the corner of the bookcase. The Vice-Chancellor's tea spilled all over the desk and overflowed on to his trousers, and our gallant administrator, roused by the clatter, tripped over the mat on the way to the rescue and joined the chaos on the floor.

The Chairman's Chair is now in the possession of our stolid Senior Lecturer, and our Professor has taken over a wooden affair which used to stand in the room where the cleaners make their tea.

* * *

George has just returned from an important conference on burns, and is full of the missionary spirit. How not to get burned is the answer to the problem, and we have all been deprived of our nighties and given 'Proban' pyjamas. Every fireplace has its own particular fireguard, and at last I think we are going to get central heating. So far so good.

Grandpa had a stroke about four years ago, and is unsteady on his pins. We have had no trouble with him about nighties, because he was "modernised" in this respect many years ago. But he says he hopes we won't get rid of the coal fire before he "goes"—in his more pessimistic moments he hopes he "goes" before we get rid of the coal fire. Although the new fireguard is an elegant affair tastefully decorated with ivy leaves, he regards it with distaste, and says it keeps the heat away.

Yesterday when I came in the fireguard was in front of the piano and Grandpa was standing on the hearthstone, swaying gently, holding his cold left hand well into the chimney. We hope George's next conference will teach him not only how to handle burns, but how to handle Grandpa.

* * *

He is a short, hardy, unwashed Eskimo. When he came to England he could not give up entirely his former way of life. He sleeps in as cold a room as possible, in a truncated bed with a mattress that would produce bedsores on a rhinoceros. It is the nearest approach to the sleeping bench in his igloo. He needs hardly any blankets, even in the middle of the winter. He seldom baths and when he does he dries himself with a minute square of towelling, for cloth is almost unobtainable in the Arctic. He never uses soap. Unfortunately, I have never met him and no-one in the university seems to know him, but I am sure of his existence. I stayed for two nights in his room while attending a meeting during the vacation.

Letters to the Editor

ANTIBIOTIC PROPHYLAXIS

SIR,—I am perturbed by your annotation of Jan. 4. I have not had the opportunity to read the papers on which it is based, but nevertheless I wish to make a few comments.

No formal definition of prophylaxis is given, but your meaning may be thought to be implicit in the second sentence: "More often than not, the belief that antibiotics will prevent bacterial infections is unjustified." This is a view with which there can be no quarrel if the word "infections" implies, as I believe it should, invasion of patients, after they have started antibiotic treatment, by bacteria new to them or at least absent from them at the time when the treatment began. Theoretically, however, it is surely possible that such invasion might be by organisms sensitive to the drug being used, and thus infection would not become clinically manifest and so might be said, in a sense, to have been prevented. Hence it might be maintained that the statement "To use antibiotics for clean operations with the object of escaping wound sepsis or respiratory complications is a vain hope" is logically indefensible even if one cannot commend the practice it condemns. But what is a clean operation? And does not prophylaxis in this context refer not to pure aseptic cleanliness, since that is unattainable, but rather to the control of those ineradicable organisms which lurk subclinically, waiting the opportunity afforded by operative trauma to spread and multiply?

From the remark "Among patients undergoing operations . . . (for) resection of the colon with anastomosis, postoperative complications were as common in those who received antibiotics as in those who did not" it might be thought legitimate to infer that modern methods of preoperative preparation of the bowel by appropriate sulphonamide or antibiotic drugs are ineffective; this is contrary, I believe, to the majority opinion. Equally, from the remark that "the incidence of wound infections after appendicectomy for acute suppurative and acute gangrenous appendicitis was not reduced by parenteral tetracycline therapy" it might be assumed that there is no place in even the severest forms of acute appendicitis for antibiotic treatment; this too I believe to be at least debatable. The evidence cited from the work of Petersdorf et al.[1] appears to be unbalanced; for example, "No benefit was derived from the chemotherapy; on the contrary, patients given antibiotics were more susceptible to pneumonia, cutaneous staphylococcal infections, and bacteræmia due to gram-negative bacilli"; and again "Routine administration of antibiotics did not prevent infection . . . but often resulted in the infecting organism being a highly resistant proteus or pseudomonas"; these statements seem to me to savour of special pleading, even of propaganda. If this is so it might appear that you have spoiled an excellent case by biased overstatement and so failed to carry conviction in the entirely laudable aim of reducing the indiscriminate use of antibiotics.

Falkirk. RONALD G. HENDERSON.

*** Mr. Henderson seems to disregard a danger which has long caused us concern—namely, that the widespread use of antibiotics will, by suppressing susceptible organisms, enable resistant strains to become dominant in an individual or in a community. Even when there appears to be a good case for the use of antibiotics in prophylaxis—as in operations on the bowel—there still seems to be some doubt whether clear evidence of benefit can be produced. We are impressed by the reports to which Pulaski [2] refers, and by the findings of Petersdorf et al.[1], and we do not think we overemphasised their implications.—ED.L.

1. Petersdorf, R. G., Curtin, J. A., Hoeprich, P. D., Peeler, R. N., Bennett, I. L. *New Engl. J. Med.* 1957, **257**, 1001.

SIR,—Dr. Warren Crowe (Jan. 18) wishes to express his full agreement with your conclusion (Jan. 4) that antibiotics should not be used to prevent sepsis, but he still recommends the use of sulphonamides as prophylaxis. Are sulphonamides in effective dose not more toxic and hazardous than penicillin? The question is not what one uses as a prophylactic agent but whether "chemoprophylaxis" is beneficial and safe. There are certain clinical conditions, such as rheumatic fever, disabling chronic bronchial infection, and valvular heart-disease in a patient undergoing dental extraction, where chemoprophylaxis and antibiotic prophylaxis have proved their value. To withhold prophylaxis is, at times, more dangerous; but I would certainly reiterate that the antibiotics should not be used indiscriminately to prevent sepsis, especially in the conditions mentioned in your annotation.

Victoria Hospital, Accrington, Lancs. S. S. JHAVERI.

SIR,—I was interested to read Dr. Warren Crowe's letter (Jan. 18) and to learn that he had been using sulphonamides prophylactically in the treatment of arthritis accompanied by focal sepsis. He mentions that he has had some success with a new form of sulphonamide drug, and in this connection I thought it might be of interest to record my experiences with sulphaethylthiadiazole ('Sethadil').

Although recently introduced to this country, it has been in regular use since 1940, first on the Continent and then in the United States. A long-acting sulphonamide, it is of great value in the treatment of lobar pneumonia, bronchopneumonia, and similar infections, as it has a potency and antibacterial spectrum which is almost identical with that of sulphadiazine or sulphafurazole.[3]

I have used a great number of sulphonamides, but have always been conscious of the risk that they might lead to renal complications. However, the risks of this with sethadil seem to be fairly small. According to Frisk [4] and Terrell [5] only 5–10% of the drug appearing in the blood or urine is acetylated. Terrell also states that the free drug has a solubility of 300 mg. per 100 ml. in urine as acid as pH 5·3–5·6.

Three doses in twenty-four hours completely controls the majority of infections for which I prescribe it, and after the initial three doses a day I find that often only two doses daily is sufficient.

In my hands sethadil is as efficacious as the best of the currently available sulphonamides, and to my mind it can be used with far less worry about harmful renal effects. As it is not necessary to insist on the patients taking more than the normal amount of fluid per day, I find this drug particularly useful in cardiac cases and also in children where it is always difficult to give large amounts of fluids.

Although this drug is rather more expensive than most sulphonamides, by using it in an increasing proportion of

2. Pulaski, E. J. *Practitioner*, 1957, **179**, 465.
3. Rhodes, R. E., Bard, R. C., McCaughan, J. A. *Antibiot. Chemother.* 1956, **7**, 175.
4. Frisk, A. R. *Acta med. scand.* 1943, **103**, suppl. 142.
5. Terrell, W., Yow, E. M., Daeschner, W. *Med. Clin. N. Amer.* 1957, **41**, 546.

patients, some of whom I would normally have treated with very much more expensive antibiotic preparations, I am quite sure that I have effected an appreciable reduction in my prescribing costs.

London, N.W.10. ERIC M. SKLAR.

PROBLEM FAMILIES

SIR,—Dr. Scott reports in his "London survey" (Jan. 25) that the incidence of problem families among the homeless is slightly more than four times as high as that ascertained by the public-health department among families living in their own homes. In the television programme "Panorama" (Jan. 6) the B.B.C. showed briefly, but poignantly, the plight of families becoming homeless, and Lady Allen of Hurtwood writes [1] of her concern for the children who suffer with their parents in this way. These reports are very disturbing.

Dr. Scott's survey demonstrates clearly that the "potential problem parent" does, by his own insufficiency, tend to become and remain homeless. Careful consideration, however, of the many unavoidable reasons for which families become homeless points inescapably to the conclusion that the consequent suffering and degradation are sufficient to force even self-respecting families down into the "problem" group.

The National Assistance Act, 1948, places a duty on the welfare department of the local authority to help any family whose homelessness can be said to be due to any circumstances which "could not reasonably have been foreseen"—fire, flood, and gale damage, for example, but not necessarily eviction in all its cruel and varied circumstance. In contrast to the National Assistance Act, the Children Act, 1948, places a duty on the local authority, through the children's officer, never to refuse to receive into care any child destitute of shelter. A cruel choice for parents: separation and good material care for their child, or continuing a shared ordeal that only too often makes the child ill.

Some brave and intelligent parents part temporarily with their children, and, competing with many other families in a similar plight, do find a new home; but, to quote Dr. Scott again, "there seems to be a limit to the difficulties with which a stable but dull parent can compete, after which one further adversity will produce a complete breakdown in domestic management". Such parents give up their children and move into lodgings which, as childless people, they can find without difficulty. Both may go out to work. Why not? What hope have they of resuming normal home life? Probably they have another baby, and probably in consequence they are evicted from lodgings where they were accepted only because they were childless. Meanwhile, the cost to national funds of maintaining their other children would be sufficient to pay the rent of an expensive family flat. Some children thus grown up "in care" are placed in work with the help of the local authority. Probably, by reason of parental deprivation, they are inadequate citizens. The cycle of problem families starts again.

Some parents postpone the separation of their children from their mother by taking leave of each other. The father goes into lodgings and has to pay for a landlady to look after him. He has to pay also towards his wife and children's maintenance in either a homeless-family unit or short-stay accommodation. The father must search for accommodation after the day's work and the mother during the day, taking with her in any weather whatever children they have, however young.

It is at this point that I so often meet these families, referred from the casualty department, hungry and unwashed, the mother undeservedly drab, with broken shoes, and one or more of the children ill. Usually with the children's illness the family's courage breaks, and they accept separation from their children for an indefinite time.

1. *Times*, Jan. 25.

London is deservedly famous for its progressive and compassionate care of its children. Dr. Scott's survey shows again how wisely and how comprehensively London's children are known. Nevertheless, in London and all up and down the country, these pitiful families move about without a plan, and by reason of just this aimless drifting they remain, for the ordinary citizen, out of sight. Public concern, if informed, would surely give such support to the authorities which represent them that some way to surmount these almost insurmountable difficulties would be found.

I must be one of very many people who would welcome such a public inquiry as Lady Allen suggests.

Paddington Green Children's Hospital, London, W.2. EILEEN SUMPTER.

A FUNCTIONAL NECESSITY

SIR,—My letter of Jan. 18 was concerned with the difficulties of securing the facts about consultant appointments and potential consultant vacancies. I was not, therefore, as Lord Cottesloe suggests (Jan. 25), "more concerned with attacking the Regional Board and its officers than attempting to deal with the extremely difficult problem of medical staffing." Indeed I have made considerable effort to get this problem fully ventilated, and I thought it helpful to your readers to quote the difficulty I had experienced in one regional-board area.

I deliberately abbreviated my letter to you, Sir, and quoted only an extract from the written reply, because I am conscious of your need to economise in space. I am, however, grateful to Lord Cottesloe for giving publicity to the questions I asked, but I must point out that he is in error in suggesting that he is quoting my request in full. Nor would I wish to burden your readers with details of my efforts, commencing in 1956, to have this subject discussed in the duly appointed medical committee of the North West Metropolitan Regional Hospital Board.

Without quoting the correspondence in full, perhaps I may be permitted to explain that I prefaced my nine questions with the words—"may the committee members please be furnished with the following information—or as much of it as can be made available:—". Immediately following the questions my letter continued:

> "I appreciate the fact that I am asking for a very large amount of information, some of which may not be readily available. However, if we are to ensure proper staffing of our hospitals and also to solve the thorny senior registrar problem, I am quite sure that such details should be made available."

One is very glad to hear that a deputation visited the Ministry on Oct. 16, 1957. Would it be too much to hope that the general purport of that deputation and its recommendations will be reported to the medical committee of the Board? Better still had the help and cooperation of that committee been sought first of all.

I do most seriously submit that if regional boards do not make proper use of their medical advisory machinery it is virtually impossible for their professional staff to offer any concrete suggestions. I feel sure that Lord Cottesloe will not be disappointed if he asks the help of his own medical committee, and his group medical advisory committees, in solving this otherwise intractable problem.

Radlett, Herts. R. S. MURLEY.

SIR,—The whole consultant structure of the health service needs re-thinking. Why is it not possible to have a pyramid of promotion in other hospitals similar to that in teaching hospitals? What is wanted is more jobs in the middle, not more jobs at the top. It is not surprising that people fall off a ladder which has no rungs between the

third and the sixth. As long as the profession opposes the insertion of more rungs the senior registrars' present plight will remain.

In a system of more gradual promotion, although full consultant status would be reached at a much later stage of their careers, there would be a much larger number of jobs to which senior registrars could progress. In this hierarchy people could be paid according to the position they occupy and possibly according to their skill and experience, so that there would be no need for separate merit awards.

It is improbable that those who initiated the system of merit awards for consultants ever imagined that private consultant practice would continue to the extent it has. Merit awards, if such a system is justified at all, should only be paid to full-time consultants. Private practice brings its own merit awards to those who deserve them.

A system of awards for years of experience would be more appropriate to general practice, where payment is by a fixed capitation-rate. Few general practitioners engaged in N.H.S. work can devote much time to private practice, so that the only way they can improve their position is by taking on more patients. This is of doubtful advantage to both doctor and patient. If a system of awards could be coupled with a reduction in the maximum permitted number of patients, more young doctors would be enabled to enter practice and fewer middle-aged doctors would be killing themselves.

Hatfield, Herts. KENNETH C. HUTCHIN.

SIR,—As a newly appointed senior registrar I have followed the recent correspondence with interest.

I am working in pathology because this is the job I want to do. I would far rather be an assistant pathologist than a principal in general practice, and by temperament and training I would be better employed in my chosen specialty. A point that deserves wider recognition is that the career structure most appropriate to general medicine and surgery is not necessarily ideal for other branches, and should not be imposed merely for uniformity.

The essential feature of such a grade as you advocate is that it must be from here that promotions to consultant are made. Having this vital safeguard, I should regard such a post not as another obstacle but as a welcome milestone. I am only sorry that those who claim to represent me do not share my views.

TRAINEE PATHOLOGIST.

A NEW FORM OF CHLORAL HYDRATE

SIR,—Chloral hydrate is still regarded as one of the safest and most satisfactory hypnotics, but its wider use has been limited by its disagreeable taste and odour, and the absence of any tablet presentation of the drug.

Recently we have investigated a new product, dichloralphenazone (' Welldorm '). This substance is a loose molecular complex of chloral hydrate and phenazone, which breaks down readily in the gastric juices to release chloral hydrate. Dichloralphenazone is available in tablet form and, in effect, provides a readily acceptable means of administering chloral hydrate.

We have given it as a hypnotic to a wide variety of medical and surgical cases (over a hundred). Its effects have been a satisfactory sleep with no hangover. In particular the elderly patients in the sixth and seventh decade did better with it than with barbiturates.

Its toxicity appears to be comparable to that of chloral hydrate. No gastric or intestinal irritation has been observed from its use, and it appears to be very safe compared with the barbiturates.

R. A. KING
I. BIERER
P. RICHMOND
London, W.1. A. J. WATSON.

A THEORY OF NERVE DEAFNESS

SIR,—Dr. Fisch (Jan. 18) points out that we have used the term " presbyacusia " to denote any loss of high-tone sensitivity, without restricting its use to loss associated with ageing. I apologise if this should produce confusion, and it is certainly etymologically wrong. Whether or not non-conductive deafness in the young should be regarded as essentially different from old-age non-conductive deafness seems to be an open question; many workers—for example, Wever—seem to regard old-age deafness as being due to a series of minor injuries of various kinds, having cumulative effects with time. They would make no theoretical distinction. Perhaps our use might be excused, as one does sometimes talk about premature ageing.

We are very grateful for any data provided by clinicians, and especially cases of neural damage which do not produce primarily high-tone loss. In our paper (Jan. 11) we did not suggest that the supposed increase in neural " noise " would be the *sole* cause of high-tone deafness; indeed, we cited three references giving evidence of partial sectioning of the nerve producing this effect. We did suggest that loss of channel capacity, due either to increased " noise " or to loss of functional fibres, seems to give primarily high-tone loss. On the other hand, we do submit that perhaps *recruitment* may be found only in the presence of noise, be this neural or external in origin. Any data bearing on this would be most welcome.

The finding of Dr. Fisch that some lesions in the organ of Corti improve sensitivity for high tones is extremely interesting. If the lesions were restricted to the low-tone end, then we should not be surprised to find low-tone loss, and primarily low-frequency impairment may be produced experimentally in the normal ear by masking with a narrow band of low-frequency noise. If the low-frequency end of the organ of Corti were entirely destroyed, then the normal residual neural noise from this region should be eliminated. This could reduce the total noise-masking, and thus conceivably improve high-tone discrimination. Could this be a possible explanation? Clearly, to test this, data are needed concerning the locus of the lesions.

It seems worth adding that the change in the slope of the curves given by our experiment seem to indicate recruitment. By including points representing lower background intensities more information about the slope of these curves can be obtained. This differential intensity threshold technique might perhaps be used to estimate degree of recruitment where loudness balance cannot be used, and this might be clinically useful where both ears are impaired.

Psychological Laboratory, Cambridge. R. L. GREGORY.

SIR,—I have read with interest the article by Mr. Gregory and Miss Wallace (Jan. 11).

They say that peak clipping has been tried in nerve deafness but with only slight improvement, and suggest that it may be necessary to filter out those frequencies where impairment is greatest to reduce stimulation.

Dr. Harvey Fletcher in his book *Speech and Hearing in Communication* had advocated that in cases of high-note loss the frequency response of a hearing-aid should have a slope equal to one-third of that caused by the nerve-deafness factor, and this in most cases means greatly increasing the amplification in the high notes. Hearing-aid manufacturers have successfully fitted aids in many thousands of cases of nerve deafness, using automatic volume compression and tone control along the lines recommended by Dr. Harvey Fletcher. In our experience it is

essential, in those cases where the audiogram shows little loss in the low frequencies, to cut out these low frequencies below about 1000 c.p.s. almost entirely. This produces in many cases a striking increase in tolerance and intelligibility.

There is a school of thought that believes that distortion may be introduced by high-frequency sound and that this may vitiate the improvement of the hearing given by the lower frequencies.

In some of the current hearing-aids manufacturers have fitted a " high-note cut " to take care of this factor, if it exists. Experience indicates that while this switch is helpful in reducing rubbing noise it has not so far been possible to detect any improvement in hearing or comfort following its use. It may be that the factors of stimulation and distortion arise above the highest effective frequency of the hearing-aid—about 3500 c.p.s.

I think we may fairly claim to be able to help 90% of the nerve-deafness cases referred to us, but I feel that we are going to require much more information before we can help the remaining 10% if, in fact, they will ever be helped at all by hearing-aids.

Hearing Aid Manufacturers Association Ltd.,
Hastings House, Norfolk Street,
London, W.C.2. A. EDWIN STEVENS
President.

ENZYME TESTS FOR GLUCOSE

SIR,—The 'Clinistix' test has recently [1] been found to be highly specific for glucose in urine, none of a number of other sugars, when freed from glucose, giving a positive result at concentrations below 20%.

The first comprehensive investigation [2] of the specificity of glucose oxidase (notatin) showed that modifications to C6 of the glucose molecule reduced the rate of oxidation to 2% or less of that of glucose. Within the past year 2-deoxyglucose has been reported [3] to be a fairly good substrate for this enzyme; Sols has also demonstrated that glucosamine is slowly oxidised at pH 8·0. Another substrate, which is oxidised at about the same rate as 2-deoxyglucose is glucosone (2-oxo- or 2-hydroxy-glucose).

Although glucosone and 2-deoxyglucose react readily with clinistix and " Testape " under the conditions employed in urine testing there is no evidence that either sugar ever appears in urine. 2-Deoxyglucose has not, to my knowledge, been reported as a natural product; the possible biological role of glucosone as a metabolic product of certain moulds, and as an intermediate in sugar interconversions, has been reviewed recently.[4]

Both sugars are, however, being used increasingly in metabolic studies, and the limitation of manometric and colorimetric glucose assay using glucose oxidase should be kept in mind.

Department of Biochemistry,
St. Salvator's College, St. Andrews. STEPHEN BAYNE.

SURGERY OR RADIUM FOR CANCER?

SIR,—We write to refute the suggestion made by Dr. Lederman and his colleagues (Jan. 18) that we in Birmingham wish to revive the old conflict between radiotherapy and surgery. In the United Birmingham Hospitals patients with carcinoma of the cervix are seen at clinics at which both radiotherapy and gynæcology are represented. Furthermore, many gynæcologists working in the area have actively participated in the formation of our treatment pattern.

There may be little to choose between the results of radiotherapy alone, surgery alone, or the judicious combination of both methods when comparable series of clinically and technically operable cases are reviewed. We agree that radiotherapy is the treatment of choice in all stage-2 cases where the parametrium is obviously involved with growth, in addition to stage-3 and stage-4 cases. In many of the remaining stage-1 and stage-2 cases with gross obesity or other serious medical contra-indications, radiotherapy is clearly preferable. In the residual group (stage 1 and stage 2) the lower morbidity from irradiation treatment must be weighed against the possible advantages which operation affords of the dissection of pelvic nodes and concealment of the diagnosis.[1 2]

H. C. MCLAREN
P. B. KUNKLER
A. L. T. EASTON
United Birmingham Hospitals. J. A. H. WATERHOUSE.

MANIPULATION FOR BACKACHE

SIR,—Knowing how successful manipulation can be, I admire Mr. Bremner's efforts (Jan. 4). Considering his cases were not chosen according to any definite diagnosis, his 10% success was good. If a careful history of the onset of pain had been taken and manipulation had been carried out on those patients who had a sudden onset, the 10% might easily have risen to 50%.

I do not agree with his using an anæsthetic, as, without the cooperation of the patient and a re-examination after each manœuvre, it is difficult, if not impossible, to tell whether an improvement has been obtained.

Mr. Thomas's reason (Jan. 25) for manipulation shocks me. To manipulate the spine as a " placebo ", I hope will be deprecated by all his orthopædic colleagues.

Mr. Thomas mentions that he has never seen at operation a disc protrusion that could be reduced by manipulation. That, of course, is as it should be. Operation should be carried out only when the protrusion is irreducible by manipulation or traction, or if epidural local anæsthesia fails to bring relief.

London, W.1. R. BARBOR.

SIR,—Mr. Thomas (Jan. 25) has asked that very awkward question " What precisely do you attempt when you manipulate? " I agree with him that the glib answer about breaking down adhesions is improbable in this instance. Personally I try to separate the joint surfaces to restore " joint play ", and, if I am lucky, I break the vicious circle of pain—spasm—pain. Treatment by rest, support, or the injection of a local anæsthetic may achieve the same result, but I have the " clinical impression " that manipulation is more effective.

Is Mr. Thomas convinced that the relief of pain which can follow manipulation of a hip is due to the breaking of adhesions?

London, W.1. W. HARGRAVE-WILSON.

SIR,—It has been said that there is no useful research without hypothesis. Equally, no progress can be made unless one is prepared to revise the theoretical basis if the hypothesis does not fit the observed facts. Nowhere does this seem more applicable at present than the prolapsed disc.

The facts of the case appear to me that the disease commonly called prolapsed disc begins suddenly when the erector spinæ muscles are in tension and the spine is curved both forwards and laterally—for example, when the patient, with a bent back and straight legs, moves some heavy object (such as a shovelful of coal or a trunk) and passes it to one side.

Another significant fact is that scores of unrecognised manipulators are making a laughing-stock of those orthopædic surgeons who believe in six weeks' rest or plaster jackets as a first ploy for conditions which lay manipulators, in spite of

1. Adams, E. C., Burkhart, C. E., Free, A. H. *Science*, 1957, **125**, 1082.
2. Keilin, D., Hartree, E. F. *Biochem. J.* 1948, **42**, 221; 1952, **50**, 331.
3. Sols, A., de la Fuente, G. *Biochim. biophys. Acta*, 1957, **24**, 206. McComb, R. B., Yushok, W. D., Batt, W. G. *J. Franklin Inst.* 1957, **263**, 161.
4. Bayne, S., Fewster, J. A. *Advanc. carbohyd. Chem.* 1956, **11**, 43.

1. Bonney, V. *J. Obstet. Gynæc., Brit. Emp.* 1941, **48**, 421.
2. Currie, D. *ibid.* 1958, **64**, 871.

little medical knowledge and no radiographic control, can cure in a matter of minutes—using "cure" in the sense that the patient's complaint of pain and disability is removed completely.

In the simple manipulation which appears to be used by some of these operators, and which I was shown by an orthopædic surgeon two years ago, one rotates the spine by gently persuading the bended knee down to the floor or bed on the opposite side, while the patient is lying relaxed, face upwards. In many cases this produces an audible crack, similar in quality to the noise emitted by a forty-plus doing a knees-bend, suggesting tense tendon or muscle slipping over a bony prominence. I do not see how this noise can be produced by a protrusion and restoration of the intervertebral disc. This noise is accompanied by a sudden relaxation of tension in whatever muscle is being stretched (presumably the erector spinæ group), which can be felt quite distinctly with the guiding hand. This is followed immediately by improved mobility and decrease in pain in most cases.

Putting these two facts together, I would therefore suggest that the primary condition in a so-called "slipped disc" is a displacement of a muscle bundle or tendon in the erector spinæ, which, because of its displacement and discomfort, goes into spasm. This spasm may result in the nearby vertebræ being pulled tightly together and thus mechanically producing disc protrusion. I suggest that if this disc protrusion involves irreversible trauma to its retaining ligaments, then the protrusion can become permanent and can indeed be the chief source of further muscle spasm and disability—irreducible by manipulation and requiring spinal support or operation or both.

By means of this simple manipulation (to be done afterwards as exercise by the patient along with the more usual hyperextension exercises), I find that my rate for referral to hospital of these unfortunate patients is reduced to about a tenth.

Perhaps I may quote a typical case illustrating these points.

A commercial traveller, aged 51, was driving one day to Glasgow and missed his footing when getting out of the car. He felt the usual knife-like stab in the back and found getting about extremely painful and difficult. At one of our larger teaching hospitals he was very thoroughly examined and investigated, but no very concrete effort at therapy was made, and, after spending all day in various departments of the hospital, he decided to come home. After an agonising night, he came to my surgery, where, by this simple manipulation, he was greatly relieved; his only comment was "Why didn't somebody do that in Glasgow?" He has had only minor trouble since, from slight recurrences, which he has been able to control and manage himself along the lines indicated.

I strongly support, therefore, those who urge early manipulation for "slipped disc", and hope that those in a position to do so will be able soon to put this on a sound theoretical basis.

Workington, Cumberland. R. N. R. GRANT.

TREATMENT OF MYXŒDEMA

SIR,—We were much interested in the article by Dr. Gibson (Jan. 18) on the control of the treatment of myxœdema by electrocardiography. His statement that only patients "with a significantly lowered basal metabolic rate (B.M.R.) are included" is however a little puzzling, since three of his patients, nos. 3, 6, and 7, had B.M.R.s of −6%, −3%, and −11% respectively.

Dr. Gibson does not tell us the standards or method used for determining the B.M.R., and we should be much interested to have this information. Robertson and Reid [1] have shown that when the standards of Aub and DuBois [2] are used, the range of normal variation in Britain is 0 to −20%, and Robertson (personal communication) accepts as normal a variation of +15% to −15% for the British standards of Robertson and Reid.[1]

Dr. Gibson gives detailed information about two of these patients (nos. 3 and 6). Both of these had undergone thyroidectomy. In case 6, the B.M.R. was found to be −3% seventy days after a *complete* thyroidectomy. Means [3] says that complete athyreosis develops in about eighty days after acute withdrawal of thyroid hormone. It is therefore rather surprising that this patient's B.M.R. was as high as the value given by Dr. Gibson.

Case 3 had a subtotal thyroidectomy. The clinical findings, apart from tiredness, do not suggest hypothyroidism; the B.M.R. was −6% and the serum-cholesterol 235 mg. per 100 ml. The only clear support for the diagnosis in this case appears to be the electrocardiographic changes, presumed to be due to thyroid therapy. These changes are of limited diagnostic use; Means [4] found that 7 out of 24 athyreotic patients retained their T-wave abnormality after specific treatment.

Department of Chemical Pathology, West London Hospital, London, W.6. I. J. L. GOLDBERG M. J. SEAMAN.

1. Robertson, J. D., Reid, D. D. *Lancet*, 1952, i, 940.
2. Aub, J. C., DuBois, E. F. *Arch. intern. Med*, 1917, **19**, 823.

SYRINGES: CLEAN OR STERILE?

SIR,—Dr. Morton (Jan. 18) draws attention to the danger of a mass-inoculation technique in which one syringe is employed to inoculate many different people using a separate sterile needle for each patient. It would be interesting to know whether the Medical Research Council is considering re-writing its official memorandum [5] which advocated this type of technique when mass inoculations have to be made, because most doctors who are giving subcutaneous and intramuscular inoculations ensure that the needle is not in a vein by pulling back the piston of the syringe after the needle has been inserted into the tissues. It is curious that although nearly everyone is taught to do this it is not mentioned by the M.R.C. and very few textbooks describe the technique.

I have now read the leaflets issued with the poliomyelitis vaccine made by the Connaught Laboratories of Canada and Glaxo Laboratories and Messrs. Burroughs, Wellcome of England. The first two makers state that the vaccine should be given by intramuscular injections and the last intramuscularly or subcutaneously. The Connaught Laboratories write: "to avoid possible intravenous injection, pull back the plunger to make certain that no blood is withdrawn and then slowly inject the desired dose". This habit of preventing an intravenous injection, which I think any good doctor develops, and the use of the intramuscular route which Salaman et al. [6] showed was liable to transmit virus hepatitis, indicate how unsafe a mass-inoculation technique, like those advocated by the M.R.C., could be. The method of oil sterilisation [7 8] would be very much safer as sterile syringes and needles are easily provided for every patient. Very many children and some adults are now to receive poliomyelitis-vaccine inoculations, and I hope that a sterile syringe as well as a sterile needle will be provided for each patient.

Children's Hospital, Birmingham, 16. K. B. ROGERS, Clinical Pathologist.

SIR,—I am grateful to your correspondents for drawing my attention to the mistake in my letter of Jan. 18. I

3. Means, J. H. The Thyroid and its Diseases. Philadelphia, 1937; p. 202.
4. Means, J. H. *ibid.* p. 249.
5. Medical Research Council war memorandum no. 15. The sterilisation, use, and care of syringes, p. 14. H.M. Stationery Office. Reprinted 1954.
6. Salaman, M. H., King, A. J., Williams, D. I., Nicol, C. S. *Lancet*, 1944, ii, 7.
7. Rogers, K. B. *ibid.* 1946, ii, 87.
8. Flemming, A., Ogilvie, A. C. *Brit. med. J.* 1951, , 543.

should have said that the syringes I described are sterilised in a hot-air oven.

A local colleague, who uses similar syringe equipment, bought a second-hand electric oven, with a thermostat which maintains the temperature at 160°C, for about £12. This makes the cost of this technique of sterilisation comparable to the less efficient methods using water sterilisers.

London, S.E.26. R. N. JACKSON.

SPUTUM IN CHRONIC BRONCHITIS

SIR,—I was most interested to read the papers on this subject by Dr. Brumfitt and his colleagues (Dec. 28 and Jan. 18), and it is gratifying to learn that conclusions based on sputum cultures are in general confirmed by their more elegant bronchoscopic swabbing technique. I think, however, that two points require comment.

The first concerns the site of infection in "bronchitis". In spite of the name, most of the inflammation, and presumably therefore the infection, is situated in the bronchioli and smallest bronchi, into which no swab can possibly penetrate.[1] Bronchial swabbing, in the absence of infection of the larger bronchi, will only detect organisms deposited at the site by the passage over it of infected bronchiolar secretions, and consequently the recovery-rate of pathogens by this technique may well be *lower* than the actual incidence of these organisms in the bronchioles.

Secondly, and more important from the practical standpoint, I feel that some qualification is required for Dr. Brumfitt and Dr. Willoughby's statement that ". . . the presence of pus was a poor guide to the presence of infective lesions of the bronchi". Presumably "infective lesions of the bronchi" in this context is synonymous with the presence of pathogens in the sputum. This, however, is extremely variable from specimen to specimen in the individual patient, even when pus is present, and a true conclusion as to the pathogenic flora of any patient's sputum can only be drawn from examination of many specimens.[2] Dr. Brumfitt and his colleagues apparently obtained their results from the study of single specimens, and in these circumstances I would agree that the presence of pus does not necessarily indicate the presence of a pathogen. The correlation is much closer, however, if multiple specimens are examined, and our experience has been that in these circumstances the purulence of the sputum provides an excellent index of the presence of pathogens.

Institute of Diseases of the Chest, Brompton, London, S.W.3. J. ROBERT MAY.

SUBURBAN NEUROSIS UP TO DATE

SIR,—In your leading article of Jan. 18 you cite the results of a recent survey illustrating the much higher incidence of psychoneurotic illness among the rehoused population of a newly developed "out-county" housing estate to the north of London, compared with the "expected estate figure on a national basis" obtained by the Social Survey of Sickness.

In discussing this higher incidence you point out that rehousing on such estates is partly determined by medical certification, but it can account for only a small part of the excessive neurotic illness encountered. From this it is deduced that the determining factor is the absence of social amenities and the degree of social isolation engendered thereby. It is true that many housing estates in this country, private as well as municipal, are without adequate social amenities, and many rehoused families on municipal estates must indeed find it difficult to accommodate themselves to the new and unfamiliar surroundings, so different from the more sociable atmosphere of their former environment. In the process of adaptation, casualties undoubtedly occur.

It should be remembered, however, that a rehoused population on a municipal housing estate is a highly selected population. The criteria of selection may vary in detail with different authorities; but, in general, priority is given to families who are either without accommodation of their own or are living under socially or hygienically undesirable conditions. It is among this section of the community, which is least successful in obtaining decent housing conditions by its own efforts, that one would expect a higher incidence of and tendency to psychoneurosis than among the community at large. I consider that this selective factor is important—no less perhaps than that of the paucity of social facilities on the estates to which these people have been moved.

It would be interesting to compare the incidence of psychoneurosis among the population of municipal estates on the one hand and of comparable private-enterprise estates on the other. There might well be a significant difference.

Health Department, Colchester, Essex. R. E. BARRETT.

DEATH FROM POSTMATURITY OR INDUCTION OF LABOUR?

SIR,—Mr. Gibberd (Jan. 11) accepts the dangers of postmaturity but wishes to convince us that the dangers of induction of labour are of the same order. I should like to comment respectfully on two points in his article which I find unconvincing.

If I understand his figures correctly, 1219 out of 8503 women (14·3%) at Queen Charlotte's Hospital reached forty-two weeks' gestation undelivered. He therefore suggests that if forty-two weeks is taken as a reasonable "deadline", it would be necessary to induce labour in this number (1219) in order to avoid the hazards of postmaturity. But he must surely agree that the label "forty-two weeks" in the hospital records often fails to stand scrutiny. In a similar group of women reckoned overdue by the usual calculations, McKeown and Gibson [1] had to reject 172 out of 247 because of uncertainty concerning dates, bleeding in the early months, and a long or irregular cycle. Further, it is generally believed that the multigravida is notably less liable to fœtal loss from postmaturity, though she is equally liable to be overdue. Thus I think that many a clinician might induce labour in only a quarter of the total number suggested by Mr. Gibberd, but out of that quarter he might hope to salvage (say) three-quarters of the possible loss from postmaturity.

My second point of disagreement concerns that small hard core of primigravidæ who have been correctly assessed as postmature but, when induction has been tried, refuse stubbornly to budge. Whether it be failure to start or an inert or disordered action after starting, I believe forty-eight hours to be the maximum safe period to allow following surgical induction in confirmed postmaturity. I found this to be true in a previous series [2] and the 4 cases of stillbirth quoted in Mr. Gibberd's article seem to emphasise this.

No-one would dispute his point that the perfectly safe method of induction has not yet been described. One could wish, too, to have some cast-iron test (e.g., by paracentesis) to confirm one's clinical impression of postmaturity. But even without these things, I think that better results can be obtained than those which follow a policy of strict non-interference, provided the clinician adopts a policy of selection and not routine induction, and provided

1. Reid, L. M. *Lancet*, 1954, i, 275.
2. May, J. R. *ibid.* 1954, ii, 839.

1. McKeown, T., Gibson, J. R. *Brit. med. J.* 1952, i, 938.
2. Parker, R. B. *J. Obstet. Gynæc., Brit. Emp.* 1957, **64**, 94.

he is prepared to undertake a number of cæsarean sections in the fœtal interest in a group with a high fœtal risk.

Birmingham. R. B. PARKER.

SIR,—In discussing the management of established postmaturity Mr. Gibberd has made a critical analysis of surgical induction of labour as a method of dealing with this undoubted problem.

In table II of his article 4 stillbirths are recorded in 68 surgical inductions for postmaturity at Queen Charlotte's Hospital. From these figures he concludes that induction is too dangerous to use in an attempt to reduce stillbirths due to postmaturity. That this hazard need not be so great is, I think, shown by the accompanying table which I have compiled for surgical inductions of labour carried out at this hospital during the 3-year period 1955–57 when there were 1882 deliveries of viable infants. The indication in each case was postmaturity alone.

INDUCTION OF LABOUR BY ARTIFICIAL RUPTURE OF THE MEMBRANES FOR POSTMATURITY WITHOUT OTHER ABNORMALITY

Completed weeks of pregnancy	41	42	43	44 or more	Total
No. of inductions	3	35	8	1	47
No. of cæsarean sections after failure of induction	1	3	1	1	6
No. of stillbirths	0	0	0	0	0

There were no stillbirths in these 47 inductions, but cæsarean section was resorted to more frequently than in Mr. Gibberd's series. This is presumably justifiable in view of his comments on the 4 stillbirths in his series.

During the same period 1955–57 there were 5 stillbirths in this hospital attributed to postmaturity alone in patients who were not induced (fœtal loss 0·26%). These occurred despite the general policy to induce labour soon after 42 weeks where postmaturity seemed established. It appears that induction with early resort to cæsarean section if the induction is unsuccessful can be safely used to save more babies but is not the complete answer to the problem.

I wish to thank Mr. Leslie Williams for permission to include in this letter the figures used above.

St. Mary's Hospital, London, W.2. P. S. WATSON.

UNUSUAL URINE PROTEIN IN MYELOMATOSIS

SIR,—We were interested in Mr. Cummings' letter of Sept. 21.

Fifteen cases of myelomatosis were studied by paper electrophoresis of serum at the 2nd Clinic of Internal Medicine of Athens University (under the direction of Prof. A. Gouttas). In two cases, two pathological fractions were found instead of one.

In the first case no pathological fractions were found in urine. In the second case the only pathological fraction in urine corresponded to the slower and smaller pathological fraction of the serum.

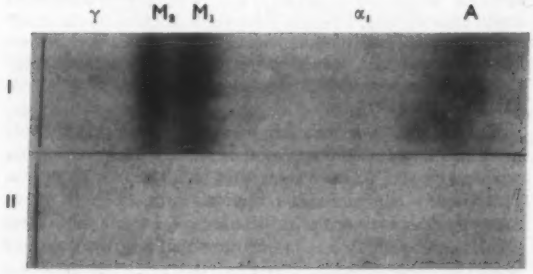

Fig. 1—First case. Electrophoretic patterns of serum (I) and urine (II). Buffer: veronal, pH 8·6. Paper: Whatman no. 1. Stain: Bromophenol blue.

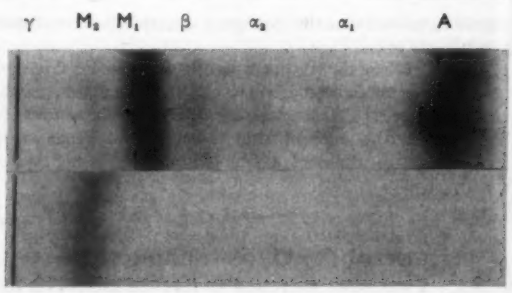

Fig. 2—Second case. Electrophoretic patterns of serum (I) and urine (II).

The existence in the serum of two pathological fractions, in some cases, may perhaps explain the presence in the urine of two pathological fractions. It is strange that, in our two cases, electrophoresis of urine did not show the existence of the two pathological fractions.

The pathological serum fraction in Mr. Cummings' case may possibly have consisted of two fractions in close contact, which could be separated by the urine electrophoresis. Perhaps electrophoresis of a highly diluted specimen of serum could demonstrate the existence of two fractions.

Hippocration Hospital, Athens, Greece. HIPP. TSEVRENIS BYRON G. SAMIOS.

WHERE DOES MEDICINE FIT IN?

SIR,—Dr. Manning[1] says that "the ever-increasing insecurity and instability of our world brings us, as doctors, face to face with people cracking and creaking under the strain".

As "the true answer" to this situation he suggests

"It is only by putting man in his right place—by viewing him in perspective—that we shall realise just how small and insignificant his troubles are. . . . We have somehow to learn that we are not the centre of the Universe, that we are not different from other forms of life, and that we have not even full conscious control of our minds. . . . We have existed for only a very short time in a very small part of the Universe. Though we happen to be the leading current form of life on our planet we are neither the biggest nor the most long-lived, and there is nothing except our pride to suggest that we are the ultimate in Evolution".

So this is what we are to tell those of our generation who are cracking under the strain of the insecurity and instability of Life. "Fear not. You are of no importance. We live on a mere speck of the Universe. We have been here a very short time compared with the amœbæ. The elephants are far bigger than we are and live longer. Please do not take yourself too seriously".

Is this sort of thing going to ease the pain of people racked by fears? Is it even rational? Is the significance of human life to be measured by the space and time in which it has been lived? If human life is the highest point in evolution, how can it have any but the shortest history?

To say that human life does not differ from any other form of life is a mere gratuitous pronouncement. If we take into consideration the extent to which humans have outstripped other species, we are compelled (apart from religious faith) at least to reserve judgment on a question such as this. If the Earth is but a tiny part of the Universe, is there any evidence whatever of life like ours in any other part of the Universe? If there is life like ours elsewhere, how does this make ours any less significant? Even if this sort of thinking were unassailable, how can it be considered helpful to a fear-ridden generation?

I quote the well-known statement of Jung:

"Among all my patients in the end half of life, that is to say over 35, there has not been one whose problem in the last resort was not one of finding a religious outlook on life. It is safe to say that every one of

1. *Lancet*, 1957, ii, 1274.

them fell because he had lost that which the living religions of every age have given to their followers."

Would people haunted by fear and insecurity in the present age not be likely to benefit more from the Christian faith than from the "cosmology" suggested by Dr. Manning? Surely, the claims of Christian teaching should be eagerly appraised. But Dr. Manning does not give a moment's consideration to religious faith. He says that our generation has thrown it overboard and prescribes for the world's ills as if religion did not exist.

If Dr. Manning and those who think like him have abandoned the Christian view of life, I hope that before doing so they gave to its credentials the consideration they demand. However, if after doing so they fail to accept the Christian faith, they should remember that there are very many who are deeply convinced that it represents the truth.

Ballina,
Co. Mayo. G. E. HEWSON.

EARLY ADMISSION TO HOSPITAL OF MENTALLY DEFECTIVE BABIES

SIR,—Miss Adams' views [1] about the care of the mongol child are of interest; but we must remember that the life-span of a mongol can extend up to 72 years.

Formerly, I thought that the mongol child's best interests in early childhood were secured by keeping him at home. It is hard to realise that the infant mongol, with his healthy appearance and almost normal early development, will so deteriorate physically and mentally that at the age of 10 and afterwards he will have a mental age of 3–4. The decision must be made on the exclusive fact that the infant mongol can never become an independent person, mentally or economically. The female mongol is better adapted to home care than the male, and exceptions may be made to the general rule of institutional care in her case. As long as the home is intact all is well, but inevitably the parents die. At this late date in life custodial care in some form must be provided, involving a difficult adjustment period to a mode of life which she is not adapted to but which must be endured henceforth. Her greatest task is coping with her memories, which in the mongol are maintained at a high level.

The initial decision about the care of the mongol should not be influenced by emotional factors, theories, or personal prejudices. The mongol infant should not be used to satisfy a temporary intense maternal instinct provoked by the birth of a child. My opinion is that the normal-minded mother can use her reason if she unfortunately gives birth to a mongol child. She should not permit the development of a selfish frustration. Her husband should not be censured because he arranges for his mentally deficient baby to be admitted to an institution which can give him, as he develops, a happiness, a state of wellbeing, and a life with opportunities and an environment which no amount of wealth can give.

One of the major advantages which the mongol has in an institution is that he is living in an environment of equality of abilities; he has physical freedom and competitive opportunities in sports where handicaps are equalised, and is not frustrated by exhibitions of physical dexterity and mental normality. Individual and small-team competitive spirit is at a high level of enthusiasm. In a good institution he will not lose his family membership, because a competent social-service worker maintains and promotes family membership. This type of function by a social-service system is in direct contrast to the role which Miss Adams plays in the care of the mongol. I do not feel she is contributing anything constructive by increasing the frustration of the mother when she criticises the obstetrician and pædiatrician and condemns the husband for acting on the wisdom and long-term outlook of his competent advisers.

For over fifteen years I have treated in an endocrine clinic young mongol children from a hospital for the mentally retarded—but not on the premise that a hormonal deficiency is a primary ætiological factor. Thyroid is administered in the presence of clinical hypothyroidism; I find the mongol child more prone than the normal to the hypothyroid state.

I gave stilbœstrol to the males with sexual disturbances, and in a few patients who were strong-willed and would flee from protective observation, I insisted on protective institutional care.

Later I began early stilbœstrol therapy to inhibit gonad development. This prevented trouble when the patient found that the heavy dose of stilbœstrol required to suppress erections also produced breast development and deep pigmentation of the areola.

When I assumed my duties as consulting endocrinologist at the hospital for the mentally retarded in late 1955, I had my first opportunity of observing and studying 50 mongols whose ages ranged from infancy to 72 years, and some 25 patients who were receiving endocrine therapy at home. I had little doubt that the survey of 75 mongols showed that the endocrine-treated mongol from the institution was the happiest and best-established individual, because socially, mentally, physically, and occupationally he was the most advanced and accomplished; this applied to both sexes.

Philadelphia,
Pennsylvania. CHARLES W. DUNN.

1. *Lancet*, 1957, ii, 950.

CONGENITAL GALACTOSÆMIA AND MENTAL HEALTH

SIR,—Current textbooks of medicine and pædiatrics discuss congenital galactosæmia only briefly.[1 2] The incidence of congenital galactosæmia has not been established for lack of simple screening methods, but there is reason to suspect that the disease is not as rare as hitherto assumed. Awareness of the disease is essential for early diagnosis and treatment so that serious consequences may be prevented. Two illustrative cases are here reported.

A white boy, aged 13 weeks, was admitted to the Children's Hospital of Los Angeles with a diagnosis of galactosæmia made in another hospital by history and by the presence of reducing substance and albumin in the urine. At the age of 14 days the formula had been changed to one containing no milk. Subsequently, the infant ate well and gained steadily. The original diagnosis was confirmed by a galactose-tolerance test and by assay of red blood-cells for PGal uridyl transferase,[3] by newly developed specific methods.[4–6]

An older brother had been in an institution for feeble-minded children for several years. His I.Q. at 12 years of age was estimated at 11, and he could neither talk nor understand words addressed to him. Galactosæmia had never been suspected, though he had been examined at several clinics. His feeble-mindedness had been ascribed to erythroblastosis. It was known that he had bilateral cataracts. Blood was made available for study through the cooperation of the staff of the institution (Dixon State School, Dixon, Ill.), and we are especially grateful to Dr. Abraham Gelperin. It revealed a striking defect of PGal uridyl transferase. The galactose-tolerance curve was also abnormal.

It seems highly probable that similar cases of unsuspected galactosæmia are present in mental institutions. Dr. Robert Cooke, of Johns Hopkins University, has found three cases of galactosæmia in training-camps for retarded children (personal communication).

To clarify the incidence of the disease and to detect unknown cases for possible therapeutic benefit to them and certainly to their newborn siblings, large-scale screening seems advisable in institutions for mentally retarded children. The clinical

1. Cecil, R. L., Loeb, R. F. Textbook of Medicine. Philadelphia, 1955.
2. Holt, L. E., McIntosh, R. Pediatrics. New York, 1953.
3. Kalckar, H. M., Anderson, E. P., Isselbacher, K. J. *Biochim. biophys. Acta*, 1956, **20**, 262.
4. Anderson, E. P., Kalckar, H. M., Kurahashi, K., Isselbacher, K. J. *J. Lab. clin. Med.* 1957, **50**, 469.
5. Maxwell, E. S., Kalckar, H. M., Bynum, E. *ibid.* p. 478.
6. Schwarz, V., Holyel, A., Komrower, G. M. *Lancet*, Jan. 4, 1958, p. 24.

indications for further screenimg might be based on the following:

(1) A family history of galactosæmia.
(2) A history of unexplained neonatal jaundice.
(3) Lenticular cataracts.
(4) Enlarged liver.
(5) Reducing substance in the urine which gives negative test on glucose test paper.*

Confirmatory laboratory tests, such as the PGal uridyl transferase assay, could be used in suspicious cases. Classical methods for identification of urinary reducing substances by chemical or chromatographic methods, and the galactose-tolerance test, might also be used.

The method of enzyme assay may supplement or replace the galactose-tolerance test for several reasons. Active indicator enzymes and coenzymes for testing have just recently become commercially available.† The enzyme assay is specific for inherited galactosæmia.[6] Moreover, galactose-tolerance testing may be contraindicated with neonatal jaundice, or with dehydration or hypoglycæmia. Further, the task of investigating large numbers of cases by galactose-tolerance tests is formidable. On the other hand, multiple enzyme assays may be done relatively rapidly by experienced technicians. Four samples, including the internal standards, can readily be analysed in 2 hours. The volume of blood required is small. Blood from the umbilical cord can be used. When necessary, arrangements should be made for collaboration with a laboratory doing the PGal uridyl transferase assay. Red blood-cells can be obtained from centrifuged heparinised blood and stored frozen until ready for shipment.[6]

If the transferase system is absent, complete investigation of the patient and his family is essential. This should include slitlamp examination for cataracts, galactose-tolerance test, and PGal uridyl transferase assay of blood samples from other members of the family.

It is not suggested that established brain damage can be improved. This is a problem of the future. Studies are at present under way of the effects of blocked galactose metabolism on the cells of microorganisms.[7] Studies on cell and tissue cultures may shed further light on these problems.

Childrens Hospital Society of Los Angeles. WILLIAM R. BERGREN
GEORGE DONNELL.

National Institute of Arthritis and Metabolic Diseases, U.S. Department of Health, Education, and Welfare, Bethesda, Maryland. HERMAN M. KALCKAR.

THE FALLACY OF THE FRACTURED CLAVICLE

SIR,—Mr. Hicks (Jan. 18) attempts to disprove what he considers to be a fallacy—namely, that the clavicle unites quickly and that this is promoted by incomplete immobilisation—by using another fallacy to do so. It has long been recognised that clinical union of fractures often precedes radiographic union by a considerable period. To use radiographic union as a standard is in itself a fallacy.

Canterbury. F. G. ST.CLAIR STRANGE.

ROYAL HOSPITAL FOR SICK CHILDREN, EDINBURGH

Dr. DOUGLAS GUTHRIE, 21, Clarendon Crescent, Edinburgh, 4, writes :

"I have been requested to collect material for a short history of the Royal Hospital for Sick Children, Edinburgh, to mark the centenary of the hospital which will be celebrated in 1960. If any of your readers have letters, documents, or photographs relating particularly to the earlier years of the hospital which they would allow me to utilise, I should be most grateful."

* Obtainable from the Ames Chemical Company, Elkhart, Indiana, and Eli Lilly Company, Indianapolis, Indiana.

† Obtainable from Sigma Chemical Company, St. Louis, Missouri.

7. Kurahashi, K., Wahba, A. Unpublished studies.

Parliament

Multiple Packs

IN an adjournment debate on Jan. 23 Dr. J. DICKSON MABON reminded the House that when the new National Health Service charge of 1s. for each item on an E.C.10 form was discussed, the Health Ministers had agreed to consider introducing multiple packs for some chronic patients, including diabetic, tuberculous, colostomy, and cardiac cases. The new charge had been in force since Dec. 1, 1956, and so far only one new pack, for the treatment of boils and carbuncles, had been introduced. If the Government was finding it difficult to get professional agreement on the contents of possible new packs, and Dr. Mabon himself did not think that they were a good idea, should not other ways of helping the chronic sick be considered? Would it, for instance, be possible to allow a doctor to prepare his own multiple packs from an approved list of variants? Or could a doctor issue numbered registration cards to his chronic patients, so that prescriptions bearing these numbers could be freed of charges?

Mr. J. NIXON BROWNE, the joint under-secretary of State for Scotland, said that when the new charges were introduced ten multiple packs were already on the market. Examples of these were the syringe and spare needles for diabetics, the vaporiser set for bronchitic patients, and the multiple pack dressings for minor wounds. Since then the Health Departments had been trying to devise further packs for chronic patients, and in this they had had the help of the British Medical Association. But the only new pack that they had been able to devise that seemed likely to benefit enough patients to make its production useful was a larger pack of dressings for general use. This proposal was at present before the manufacturers, who were considering the production arrangements. It was hoped that it would be in chemists' shops in 8–12 weeks' time.

Everyone was disappointed that it had not proved possible to devise new packs. The main difficulty was the varied needs of different patients. Before a pack could usefully be manufactured and marketed, it must be established that the standard contents would be suitable for a reasonably large number of patients, otherwise it would be impossible for the manufacturers to support its production. Mr. Nixon Browne also thought that the patient would prefer to have the items he needed precisely prescribed for him separately, rather than be given a standard pack which did not really meet his particular needs.

Health of Office-workers

ON Jan. 24 Mr. VICTOR YATES introduced as a private member's measure the Offices Regulation Bill, which followed many of the recommendations of the Gowers report. Besides empowering the Home Secretary to lay down minimum standards in every office for "structure, arrangement and operation" for the protection of the health, safety, and welfare of employees, the Bill also made special provisions for the fencing of dangerous machinery, the prevention of injury from electrical equipment, protection against the lifting of excessive weights, and the prohibition of the employment of women before and after childbirth.

Mr. DAVID RENTON, joint under-secretary of State for the Home Department, said that the Government supported the objects of the Bill. But a measure to organise conditions in all offices was bound to be a major administrative and legislative exercise which could only follow consultation between Government departments, local and other public authorities, and

representatives of trades unions and employers' organisations. Decisions would have to be taken at the highest level on methods of enforcement, administration, and cost. It was therefore doubtful whether a private member's Bill would ever be suitable for this purpose. He agreed that private members' Bills had sometimes been successfully taken over by the Government, but such a procedure would not be suitable for this Bill because the necessary preliminary consultations had not taken place and because it left too many important questions unresolved. But he wished to leave the House in no doubt that the Government accepted the need for the Bill and the principles which it covered. A heavy programme had been announced for this session and it would be unwise to rush into legislation of this kind without adequate preparation and consultations.

QUESTION TIME

Whitley Claim

Mr. R. J. MELLISH asked the Prime Minister if he would make a statement on his meeting with staff side Whitley Council (Hospital Staffs) held on Dec. 23.

Mr. R. A. BUTLER: I have been asked to reply. Having heard the considerations put forward by the deputation from the staff side of the General Council of the Whitley Councils for the Health Services (Great Britain), on which the National and Local Government Officers Association was represented, the Prime Minister explained that the decision announced by the Health Ministers in relation to the pay of the administrative and clerical staff had been taken in the light of the need to maintain the position and purchasing power of the pound, and that the 3% increase could not be granted at the present time. He agreed that the Whitley machinery in the health services needed to be reviewed and said that in this context the points made by the deputation would be borne closely in mind.

Mr. ANEURIN BEVAN: When the National Health Service was established and the Whitley machinery itself formed part of it, it was obvious that final responsibility must rest with the House of Commons because these were very large sums of money. Is it not a fact that it was then hoped that the Whitley machinery would stand as a shield between the House of Commons and the workers involved? Would it not be wholly undesirable that large bodies of workers should be brought into conflict with the House of Commons and that wage-rates should be discussed on the floor of the House? If the Government persist in their attitude, would it not be necessary for us to have debates on wage-rates and to compare conditions with other conditions enjoyed by other members of the community; in which case, could it not easily happen that large bodies of workers in the country would come into conflict with the House of Commons and strike against the House of Commons?

Mr. BUTLER: One has to strike a balance between the sovereign power of the House of Commons and Parliament, the desire of hon. Members to discuss matters of vital importance here, and the importance of preserving what the right hon. Gentleman described as the shield of the Whitley machinery. As I understand it, since the beginning of the National Health Service it has always been accepted that Whitley agreements must be in the form of recommendations to Ministers. As Ministers are responsible to Parliament it is impossible to keep Parliament away from these problems. I would add that the Minister of Health has deliberately said that he has undertaken to look at the Whitley aspect of this problem.

Mr. W. W. HAMILTON asked the Secretary of State for Scotland if he had any further statement to make on the proposed pay increase for clerical staff within the National Health Service. Mr. J. N. BROWNE replied: The staff side of the Administrative and Clerical Staffs Whitley Council lodged a claim on Jan. 3 for a 5% increase to staffs on salaries up to £1200 per annum. The council has agreed to defer consideration of the claim until Feb. 12.

Obituary

JOHN HUMPHREY THORNTON CHALLIS

M.R.C.S., F.F.A. R.C.S., D.A.

Dr. John Challis, senior anæsthetist to the London Hospital, died on Jan. 21.

Born in 1896, he was the son of the late Dr. H. T. Challis. He was educated at the City of London School and entered the London Hospital in 1913. As a lieutenant in the Royal Field Artillery (T.A.) he left the hospital at the outbreak of the first world war and served in France and in many parts of the Middle East. Later he went with the British Forces to Russia, and afterwards to Ireland where he remained until 1922. Then, after 8 years of very varied and active service as a combatant, he re-entered The London and qualified in 1925. He spent the next 2 years in general house-appointments, alternating with periods in his father's general practice, before he began his career in anæsthetics. In 1927 he became resident anæsthetist at The London and in 1931 was elected assistant anæsthetist to the hospital.

His ability and capacity for work quickly won him a high reputation in his specialty, and his services were greatly in demand. In the '30s he visited America to study the new procedures, especially tracheal intubation, which he was introducing into this country. He was elected also to the staff of many other hospitals, including the Southend-on-Sea General, King George V Hospital at Ilford, the Royal National Throat, Nose and Ear Hospital, Plaistow Maternity, Thorpe Coombe Maternity, and the Jubilee Hospital at Woodford Green.

In 1939, despite his many appointments, his age, and his long previous service, he transferred the commission he still retained in the Royal Artillery to the R.A.M.C., and following the outbreak of war went to France again. With the rank of major he was in command of a mobile neurosurgical unit. With this he retreated towards Dunkirk and with its many hundreds of wounded he was taken prisoner.

The privations of the succeeding years undermined his health. and though repatriated in 1943 he never fully recovered. Debarred from most of the active pursuits, such as riding, which he had previously enjoyed, he never allowed disability to interfere with his work. He continued to contribute to medical literature and in 1947–48 was president of the anæsthetics section of the Royal Society of Medicine.

Ten years ago he became senior anæsthetist to the London Hospital. Of his work there J. R. E. writes:

Perhaps Challis's greatest achievement lies in his building up his department to meet the advances and increased demands of the last decade. This he did with the efficiency and quietness that were so characteristic. Always maintaining the highest standard of work, always cheerful, always kind and courteous, he was universally liked and respected. His influence reached well beyond his own department, and his students rightly felt that from him they learned "doctoring" as well as anæsthetics. He was an extremely modest man and spoke very little of his remarkably wide experience, but in his daily work and life he set an example of integrity and selflessness which could not be hidden. Above all he set an example of courage. Not even to those who knew him most closely did he ever complain about the cruel legacy of the last war, the disability of which inexorably increased. His triumph over this affliction was not the least of his many achievements, but it was one he shared with his wonderfully happy and united family, his wife Dr. Margaret Challis and their three daughters.

His memory will last long in his hospital and will challenge and inspire many to aim at the high standard of service which he himself both set and bravely reached.

DOROTHY KIRBY PATERSON

M.B. Lond., D.P.H.

Dr. Dorothy Paterson, school medical officer and assistant medical officer for Southend-on-Sea, died at her home in Thorpe Bay on Jan. 9 at the age of 43. From the Ilford County Girls' High School she won scholarships to the London School of Medicine for Women, and she qualified from the Royal Free Hospital in 1939. In 1948 she took the D.P.H. and in the same year took up her appointment at Southend.

J. S. L. writes:

Dr. Paterson's duties were mainly connected with schools and schoolchildren, but she was also medical officer to the council's residential institutions for children and medical officer to the infant-welfare centre. Her association with the nursery and children's homes was probably the most completely satisfying of all her professional activities; but her concern for the children went beyond their medical care, for she came to know some of them very well and interested her friends in the activities of the Homes. To a wide clinical experience and excellent judgment there was added an instinctive and sympathetic understanding of children, who quickly gave her their trust. As a colleague she was always helpful, self-effacing, and utterly reliable. In recent months her friends noted with pleasure some lessening of her shy reserve and an enhancement of her natural serenity.

Sir THOMAS DUNHILL

J. W. L. writes:

No account of the career of the late Sir Thomas Dunhill would be complete without mention of the fact that it was he who in 1932 founded the New End Hospital thyroid unit which, from small beginnings, has through the years increased out of all knowledge, not only in the number of patients treated, the size of its premises, its equipment, and the scope of its activities, but also in its reputation, which is nowadays not confined to the British Isles. When in 1955 he watched the Duke of Edinburgh open a self-contained, readapted wing of the hospital, to be devoted entirely to the work of the thyroid clinic and department of endocrinology, he must, one thinks, have experienced a feeling of intense satisfaction in the knowledge that here, too, he had not laboured in vain.

Appointments

BOYLE, CHARLES, M.B. Dubl., F.R.C.S.I.: senior casualty officer, Cardiff Royal Infirmary.

BURNS, J. P. J., M.C., M.B. Belf., D.P.H.: deputy M.O.H., Islington.

FERRY, G. N., M.B. Brist.: assistant M.O. (school health, maternal and child welfare), Bristol.

MAUGHAN, J. H., M.B. Durh., D.P.H.: district M.O.H., Bridlington.

MORAN, J. G., L.R.C.P.I., D.C.H., D.P.H.: assistant M.O. (school health, maternal and child welfare), Bristol.

RIORDAN, T. P., M.D. N.U.I., D.P.M.: consultant psychiatrist/medical superintendent, Cefn Coed Hospital, near Swansea.

SMITH, MARGARET I. A., L.R.C.P.E., D.OBST.: M.O. (maternity and child welfare), Manchester.

East Anglian Regional Hospital Board:

HAGUE, J. M. S., M.B. Lond.: surgical registrar, Ipswich and East Suffolk Hospital.

HOOD, JAMES, M.B. Edin.: medical registrar, Newmarket General Hospital.

ROSS, J. G., B.M. Oxon.: surgical registrar, Ipswich and East Suffolk Hospital.

SIMPSON, J. C., M.B. Alberta: surgical registrar, Ipswich and East Suffolk Hospital.

Births, Marriages, and Deaths

DEATHS

CHALLIS.—On Jan. 21, at his home, Green Rigg, Friary Lane, Woodford Green, Dr. John Challis, beloved husband of Margaret.

BIRTHS

JACKSON.—On Jan. 15, to Eileen Jackson, M.B., and John W. Jackson, M.CH., F.R.C.S., of Cressingham, Marsham Way, Gerrards Cross, Bucks.—a son, Adam John Greenwood.

Notes and News

A NEW AFRICAN MEDICAL SCHOOL?

EIGHTEEN months ago a committee, with Mr. Leslie Farrer-Brown as chairman, was formed to advise the University College of Rhodesia and Nyasaland on whether it should set up a medical school. Last April the committee visited the three territories of the Federation, and now they have presented their first report, which the college is considering.

They think that "the Federation will fall behind other communities comparable in area, population and growth unless it includes a medical school in its plans", and they recommend that such a school should be established soon, because of the need for the local training of doctors and of the need and opportunity for research. They regard it as axiomatic that the school should provide "a course of a university standard leading to a qualification which is registrable by the General Medical Council". Believing that a medical school should be integrated as closely as possible with the university of which it is part, they reject the claims of Bulawayo to be the most suitable place for the main teaching hospital, and propose instead that it should be formed round the nucleus of the new African hospital 7 miles from Salisbury. Except when doing their medical or surgical clerking, the students should "live and study and play alongside the students of other faculties". The estimated cost of creating a medical school of the type recommended, with an intake of 25 students a year, is £1 million, and the annual expenditure would be £250,000.

Besides the chairman, the committee consists of Prof. W. Melville Arnott, Prof. T. H. Davey, Prof. P. B. Medawar, Prof. R. Milnes Walker, Prof. A. D. M. Greenfield, and Dr. Honor Smith.

MAKERERE COLLEGE

FOR the University College of East Africa an important event of the last academic year[1] was that the General Medical Council recognised its licentiateship in medicine and surgery—the only African qualification so far recognised by the Council except those granted in the Union of South Africa.

In the medical faculty much of the teaching is done by members of the Government Medical Service who are on the staff of the Mulago Hospital and act as part-time lecturers and collaborators in research, and sit on the faculty board. Besides their teaching and heavy clinical work, the staff have found time for a great deal of research. Some idea of the hard conditions in which this sometimes has to be done is given in the report of the department of obstetrics and gynæcology:

> "The maternity department has been greatly overcrowded this past year, making teaching difficult, as mothers and babies often have to be discharged 24 hours after delivery through lack of beds. Patients are often nursed and sometimes delivered on the floor."

An echoing theme in accounts of African medicine is the want of doctors. The department of surgery organised no postgraduate course because the lack of doctors prevented the Government from releasing enough from duty to warrant a formal course. In the department of obstetrics, "leave periods mean very heavy work for the staff left behind . . . it makes it very difficult to find time for adequate research". The department of pathology was forced to reduce the number of formal laboratory classes because "Government pathologists have simply not got the time to assist in teaching large laboratory classes". It is indeed heartening that, for all these handicaps, Makerere College is successfully training the African doctors who will eventually fill these great gaps.

WORLD HEALTH ORGANISATION

THE Executive Board, meeting in Geneva, has decided to ask the Director-General to study the possibility of including sports medicine in the programme of W.H.O. Proposing this,

1. Makerere College: the University College of East Africa. Report for the year 1956–57. Obtainable from P.O. Box 262, Kampala, Uganda.

the four Scandinavian countries pointed out that our way of life, as machines are used more and more, leads to a lessening of physical activity; and coronary-artery disease, for instance, is commoner in those whose occupations involve less physical work. Sports are increasingly practised, "as they satisfy man's apparently instinctive urge for motion"; in turn they invite consideration of their effects on health and longevity, the prevention of accidents, and their mental-health aspects. The proposal urges W.H.O. to take the lead in sports medicine.

In the yaws eradication campaign, half the 200 million people exposed to the disease will have been examined, and 25 million treated with penicillin, by the end of this year. Most of the remaining 100 million live in Africa, where populations are scattered and there is not much money; the campaign is expected to take about ten years. What can be done is shown by the fall in the prevalence of yaws, since the campaign began, in Western Samoa (from 11% to 0·04%) and Haiti (from 36·5% to 0·57%).

APPROVED NAMES FOR DRUGS

THE British Pharmacopœia Commission has issued the following new supplementary list of approved names:

Approved name	*Other names*
*Alphacetylmethadol	α-3-Acetoxy-6-dimethylamino-4 : 4-diphenylheptane *O*-Acetate of α-6-dimethylamino-4 : 4-diphenylheptan-3-ol
*Alphamethadol	α-6-Dimethylamino-4 : 4-diphenylheptan-3-ol
Azacyclonol ..	Diphenyl-(4-piperidyl)methanol Frenquel is the hydrocloride
*Betacetylmethadol	β-3-Acetoxy-6-dimethylamino-4 : 4-diphenylheptane *O*-Acetate of β-6-dimethylamino-4 : 4-diphenylheptan-3-ol
*Betamethadol	β-6-Dimethylamino-4 : 4-diphenylheptan-3-ol
†Bromodiphenhydramine	2-(4-Bromodiphenylmethoxy) ethyldimethylamine 4-Bromo-α-phenylbenzyl 2-dimethylaminœthyl ether Ambodryl
Chlorothiazide	6-Chloro-7-sulphamoylbenzo-1 : 2 : 4-thiadiazine 1 : 1-dioxide Chlotride; Diuril; Saluric
Choline Theophyllinate	Choline salt of theophylline Choledyl
Cyclopregnol ..	6β-Hydroxy-3 : 5-*cyclo*pregnan-20-one Neurosterone
Cycloserine ..	*D*-4-Aminoisoxazolid-3-one Seromycin
Deserpidine ..	11-Demethoxyreserpine Harmonyl
*Desomorphine	Dihydrodeoxymorphine
*‡Dimeheptanol	6-Dimethylamino-4 : 4-diphenylheptan-3-ol Methadol
Diphenylpyraline	Diphenylmethyl 1-methyl-4-piperidyl ether Histryl is the hydrochloride
*Etoxeridine ..	Ethyl 1-[2-(2-hydroxyethoxy)ethyl]-4-phenylpiperidine-4-carboxylate
Hexocyclium Methylsulphate	1-(2-*cyclo*Hexyl-2-hydroxyphenethyl)-4 : 4-dimethylpiperazinium methylsulphate Tral
Hydromorphone	Dihydromorphinone Dilaudid is the hydrochloride
Mannomustine	1 : 6-Di-(2-chlorœthylamino)-1 : 6-dideoxy-*D*-mannitol Degranol is the dihydrochloride
*Methyldesorphine	6-Methyl-Δ^6-deoxymorphine
*Metopon ..	Dihydromethylmorphinone
*Myrophine ..	Myristyl ester of benzylmorphine
Nandrolone ..	17β-Hydroxy-19-norandrost-4-en-3-one 19-Norandrostenolone 17β-Hydroxyœstr-4-en-3-one Durabolin is the phenylpropionate
Oxycodone ..	Dihydrohydroxycodeinone Eucodal is the hydrochloride
*Oxymorphone	Dihydrohydroxymorphinone
Promazine ..	10-(3-Dimethylaminopropyl)phenothiazine Sparine is the hydrochloride
Proquamezine	10-(2 : 3-Bisdimethylaminopropyl)phenothiazine
Thalidomide ..	α-Phthalimidoglutarimide Distaval
Thebacon ..	Acetyldihydrocodeinone
*Trimeperidine	1 : 2 : 5-Trimethyl-4-phenyl-4-propionyloxypiperidine

* Narcotic substances which fall under International Conventions and are not available as therapeutic agents.
† Replaces the approved name bromazine from May 1, 1958.
‡ Replaces the approved name methadol.

University of Aberdeen

Dr. E. Maurice Backett, senior lecturer in social medicine at Guy's Hospital and at the London School of Hygiene and Tropical Medicine, has been appointed to the new chair of social medicine at Aberdeen. He is expected to take up his appointment in October.

Dr. Backett, who is a bachelor of medicine and science of the University of London, qualified from Westminster Hospital in 1944. After working on the research staff of the Air Ministry, he held a Nuffield fellowship in social medicine and later joined the Medical Research Council's social medicine research unit. Before taking up his present post he was lecturer in social medicine in the Queen's University, Belfast. He took the M.R.C.P. in 1950 and the D.P.H. in 1955. His published work includes studies of general practice, of the social care of deaf mutes, and of the social pattern associated with the spread of infection by poliovirus. More recently, with other members of the unit, he has been inquiring into the incidence of road accidents among children and of coronary disease in doctors.

University of Edinburgh

Dr. W. L. M. Perry, director of the Department of Biological Standards at the National Institute for Medical Research, London, has been appointed to the chair of materia medica in succession to Prof. J. H. Gaddum who is retiring.

Dr. Perry qualified from the University of St. Andrews in 1943 and took the degree of M.D. five years later. After holding house-appointments at the Royal Infirmary, Dundee, he became a medical officer in the Colonial Medical Service, and was stationed in Nigeria. He joined the scientific staff of the Medical Research Council in 1947. His research has been mainly concerned with the autonomic nervous system. In 1952 he was appointed to his present post, in which he has of late years been closely concerned with controlling and testing the British poliomyelitis vaccines. He was appointed O.B.E. in 1957.

The university court has announced that Sir Stanley Davidson will retire from the chair of medicine at the end of March, 1959.

Dr. A. A. Shiyas has been appointed lecturer in the department of pathology, and Dr. J. F. Lamb lecturer, and Dr. M. Jacobsen assistant, in the department of veterinary physiology.

National Institute for Medical Research, London

Dr. D. G. Evans has been appointed director of the Department of Biological Standards at the institute in succession to Dr. W. L. M. Perry, whose appointment to a university chair is announced above. At present Dr. Evans is head of the control laboratory of the department.

University of Adelaide

Mr. R. P. Jepson, professor of surgery in the University of Sheffield, has been appointed to the chair of surgery.

Royal College of Physicians of London

On Thursday, Feb. 13, at 5 P.M. at the college, Pall Mall East, S.W.1, Dr. A. L. Cochrane will give the Marc Daniels lecture. His subject will be the meaning of the X-ray classification of coalworkers' pneumoconiosis.

Reticuloendothelial Society

The second symposium of this society will be held in Rapallo, Italy, from Aug. 29 to 31.

It is intended to discuss the subject under three main headings: the reticuloendothelial system and steroids; the reticuloendothelial system and immunity, including antibody immunity and properdin, and tumour immunity; and the reticuloendothelial system and radiation. Proposed titles of papers should be sent, with a brief summary in English, before March 15, to Dr. Alberto Marmont (Clinica Medica Universitaria, Viale Benedetto XV, Genoa, Italy), who will notify accepted speakers.

Royal College of Obstetricians and Gynæcologists

At the meeting of council held on Jan. 25, with Prof. Andrew Claye, the president, in the chair, the following were elected to the membership:

Vijayaratnam Balachandran, Bholanath Banerji, S. K. Basu, F. X. Bencini, Olga Bolitho, R. T. Booth, Carolina A. Braga, A. F. Bushby, A. S. F. Butcher, D. P. Das, F. J. De Maria, R. E. F. Devitt, P. H. Drake, I. MacD. Duthie, Mary G. Eldridge, Denys V. I. Fairweather, F. G. Feinstein, N. K. Ghose, P. R. G. Gordon, H. M. Gough, J. L. Hanington, G. H. Harris, J. C. Hartgill, C. H. Hodge, Helena E. Hughes, T. R. Hunt, A. H. John, Satyadev Khanna, Herbert Kramer, Dorothy K. C. Kwan, D. J. Mackay, Patricia C. Mackay, Sheila A. Martyn, Gillian G. Matthews, R. J. Mitchell, A. K. Mukherjee, Jean M. North, Joan North, O. K. Ogan, W. H. Patterson, P. A. Rachow, Krishna Sankari, Bernard Shieff, Ma Khin Si, Margaret L. Smith, I. H. F. Swain, Mary A. T. Tolley, R. D. Upton, Beoin Cleote Uys, A. J. Van Amerongen, J. A. Verzin, D. W. Warrell, James Willocks.

The Human Brain

On Feb. 6, 12, and 18 at 5.15 P.M. lectures on this subject will be given at Bedford College, Regent's Park, London, N.W.1. The speakers will be Prof. J. Z. Young, Dr. D. M. MacKay, and Dr. W. Grey Walter.

Faculty of Homœopathy

At a meeting of this faculty to be held at the Royal London Homœopathic Hospital, Great Ormond Street, W.C.1, on Thursday, Feb. 6, at 5 P.M., Dr. Alva Benjamin will speak on the medical profession's responsibility for the health of the community.

North of England Obstetrical and Gynæcological Society

The following officers have been elected for this society for 1958:

President, Dr. E. A. Gerrard; vice-presidents, Miss M. Evans, Mr. C. J. K. Hamilton, Mr. G. W. Theobald, Prof. C. S. Russell, and Mr. F. J. Burke; hon. treasurer, Mr. C. H. Walsh; hon. general secretary, Miss E. Mills; hon. reporting secretary, Miss U. M. Lister.

Child and Family Psychiatry

The department of child and family psychiatry of the Ipswich and East Suffolk Hospital is holding a course on this subject from March 24 to 28.

The course is open to doctors and places will be allocated in order of application to 11, Fore Street, Ipswich.

Work in Compressed Air

The Work in Compressed Air Regulations, published last August in draft form (see *Lancet*, 1957, ii, 333), are to come into operation on April 21.

Liverpool University Medical Students' Society

The annual dinner for past and present members of this society will be held at the Mecca Sefton House, Liverpool, on Feb. 6. Dr. E. T. Baker-Bates will be in the chair and the guest of honour will be Dr. T. Leslie Dowell. Tickets (25*s*.) may be had from the medical dinner secretary, Medical School, University, Liverpool, 3.

Medical Art Society

This society will hold its annual exhibition at Walker's Galleries, 118, New Bond Street, London, W.1, from Thursday, Feb. 13, to Wednesday, March 5.

International Collegium for Neuro-Psychopharmacology

The first of these international symposia will be held in Rome from Sept. 9 to 12. Those interested in presenting papers are asked to send a 250-word abstract before March 31 to Dr. P. B. Bradley, department of experimental psychiatry, Medical School, Birmingham, 15.

The Hurt Mind

Four of the B.B.C. television programmes on mental health which were transmitted under this general title last year, are now available in 16 mm. film form (*Put Away*, 5 reels, £1 5*s*. 46 minutes; *Break-down*, 3 reels, 15*s*. 29 minutes; *Psychological Treatment*, 3 reels, 15*s*. 30 minutes; and *Physical Treatment*, 3 reels, 15*s*. 33 minutes). They can be hired from the Central Film Library, Government Building, Bromyard Avenue, Acton, London, W.3.

Dr. J. C. M. Matheson, principal medical officer at Brixton Prison, is retiring after 28 years in the Prison Service.

Diary of the Week

FEB. 2 TO 8

Monday, 3rd

POSTGRADUATE MEDICAL SCHOOL, Ducane Road, W.12.
4 P.M. Dr. Brian Ackner: Emotions and the Cardiovascular System.

Tuesday, 4th

ROYAL COLLEGE OF PHYSICIANS, Pall Mall East, S.W.1
5 P.M. Dr. Cicely Williams: Social Medicine in Developing Countries. (First of two Milroy lectures.)

BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.) Dr. M. G. P. Stoker: Growth of Viruses.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2
5 P.M. Mr. J. D. S. Flew: Induction of Labour.

INSTITUTE OF DERMATOLOGY, Lisle Street, W.C.2
5.30 P.M. Dr. C. D. Calnan: Hæmangiomata.

WEST END HOSPITAL FOR NEUROLOGY AND NEUROSURGERY, 91, Dean Street, W.1
5.30 P.M. Mr. G. C. Knight: Spinal Cord Lesions.

Wednesday, 5th

ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1
5.15 P.M. *History of Medicine.* Sir Weldon Dalrymple-Champneys: Preventive and Curative Medicine in Ancient Peru. (Presidential address.)
5.30 P.M. *Experimental Medicine and Therapeutics.* Prof. C. Rimington, Dr. A. C. Allison, Dr. H. V. Ingram, Dr. J. Walters: Hæmoglobin.
8 P.M. *Surgery.* Mr. R. V. Cooke, Prof. John Bruce: Small Bowel Obstruction.

POSTGRADUATE MEDICAL SCHOOL
2 P.M. Dr. A. E. Mourant: Blood-groups and Human Races.

INSTITUTE OF DISEASES OF THE CHEST, Brompton, S.W.3
5 P.M. Dr. Paul Wood: Current Problems Relating to Congenital Heart-disease.

INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. R. W. Riddell: Ætiology of Fungous Infections.

ASSURANCE MEDICAL SOCIETY
5 P.M. (11, Chandos Street, W.1.) Dr. J. L. Livingstone: Asthma and Bronchitis in Relation to Life Assurance.

MIDLAND MEDICAL SOCIETY
8.15 P.M. (36, Harborne Road, Edgbaston, Birmingham, 15.) Dr. Dorothy Campbell: Medical Treatment of Glaucoma.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY, 64, St. James's Street, Nottingham
8.30 P.M. Mr. T. N. MacGregor: Causation and Prevention of Perinatal Mortality.

MANCHESTER MEDICAL SOCIETY
4.30 P.M. (Medical School, University of Manchester.) *Medicine.* Prof. Walter Schlapp: Charles Scott Sherrington—An Anniversary. (Presidential address.)

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH
8.30 P.M. (18, Nicholson Street, Edinburgh.) Dr. J. Halliday Croom: Management of Diabetes.

Thursday, 6th

ROYAL COLLEGE OF PHYSICIANS
5 P.M. Dr. C. Williams: Social Medicine in Developing Countries. (Second of two Milroy lectures.)

UNIVERSITY OF LONDON
5 P.M. (Middlesex Hospital Medical School, W.1.) Prof. T. S. Westoll: Pattern and Form in the Vertebrate Skull.

ROYAL SOCIETY OF MEDICINE
8 P.M. *Neurology.* Mr. D. W. C. Northfield, Dr. Denis Hill, Mr. Murray Falconer: Surgery of Temporal Lobe Epilepsy.

BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (London School of Hygiene and Tropical Medicine.) Dr. C. S. Hallpike: Remarks upon the Scientific Basis of Otological Practice.

NUFFIELD ORTHOPÆDIC CENTRE, WINGFIELD-MORRIS ORTHOPÆDIC HOSPITAL, Oxford
8.30 P.M. Prof. Myer Makin: Surgical Management of Friedreich's Ataxia.

LIVERPOOL MEDICAL INSTITUTION, 114, Mount Pleasant, Liverpool, 3
8 P.M. Dr. Thomas Black: Marcello Malpighi and his Influence on our Knowledge of the Spleen.

Friday, 7th

ROYAL SOCIETY OF MEDICINE
10.30 A.M. *Otology.* Prof. L. Ruedi, Mr. A. Tumarkin, Dr. J. F. Birrell: Cholesteatosis of the Attic.
2.30 P.M. *Laryngology.* Dr. C. H. Andrewes, Prof. C. H. Stuart-Harris: Virus Infections of the Upper Respiratory Tract.
5.30 P.M. *Anæsthetics.* Dr. P. L. Mollison: Recent Advances in Transfusion.

POSTGRADUATE MEDICAL SCHOOL
10 A.M. Sir Cecil Wakeley: Surgery of the Breast.
4 P.M. Dr. I. McD. G. Stewart: Changing Ideas about Hypertension.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY, 330, Gray's Inn Road, W.C.1
3.30 P.M. Dr. Norman Hulbert: Functional Factors in Ear, Nose, and Throat Diseases.

CORRIGENDUM: *Research on Schistosomiasis in China.*—In the second paragraph of a note describing the work of Prof. C. P. Mao (*Lancet*, 1957, ii, 498) lines 5, 6, and 7 up to "fertiliser" should have been omitted; and the following words should have appeared at the end of the paragraph: "Schistosome eggs contained in the night-soil are destroyed either by composting or by storage, especially when calcium cyanamide (which is a useful fertiliser) or urine (which produces ammonia) is mixed with the fæces."

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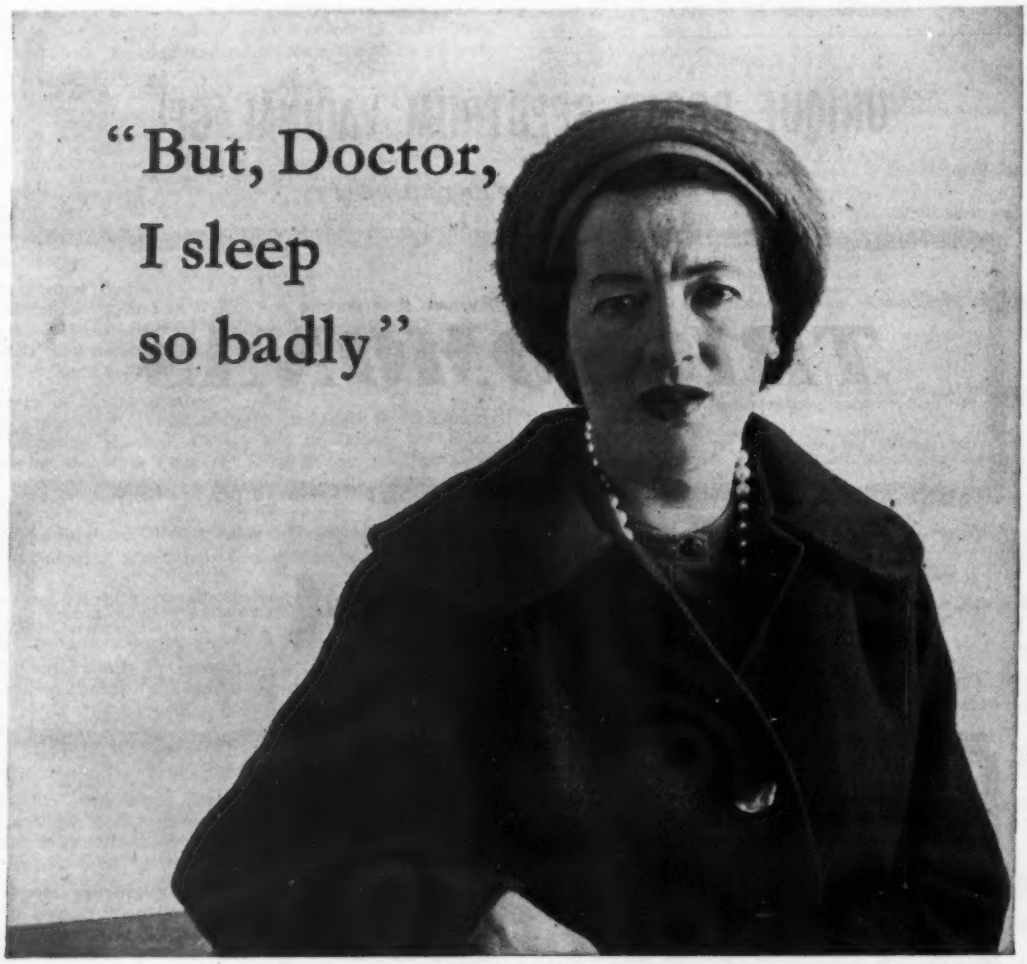

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Academic and Educational

ROYAL COLLEGE OF PHYSICIANS OF LONDON

The next EXAMINATION for the MEMBERSHIP will commence on MONDAY, 17TH MARCH, 1958.

Prospective candidates are asked to note that entries accompanied by the certificates, testimonials, and the examination fee of 15 guineas, as required by the bye-laws, must reach the College not later than first post on Monday, 17th February, 1958. Candidates must have been qualified for 18 months.

Candidates who propose to submit Published Work under the regulations are required to give 28 days' notice, and should apply in writing to the Registrar, without delay, for detailed instructions as to the procedure they should follow. Completed entries for Published Work must also reach the College not later than first post on Monday, 17th February, 1958.

HAROLD BOLDERO, D.M., Registrar.

12, Pall Mall East, London, S.W.1.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

ARCHIBALD LEMAN COCHRANE, M.B., B.CHIR., will deliver the Marc Daniels Lecture on THURSDAY, 13TH FEBRUARY, 1958, at 5 P.M. at the College, Pall Mall East, S.W.1.

Subject: "The Meaning of the X-ray Classification of Coal-workers' Pneumoconiosis."

Any member of the medical profession admitted on presentation of doctor's card.

By order of the President.

HAROLD BOLDERO, Registrar.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

PARKIN PRIZE

A PRIZE of £100 is offered under the terms of this Fund for an essay in English on The Effects of Therapeutic Measures in Diseases Caused by Protozoa or Bacteria or Viruses.

The Prize is open to competitors of all nations.

Essays must be received by The Secretary, Royal College of Physicians, Edinburgh, 2, not later than 31st December, 1958.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

SURGERY LECTURES AND CLINICAL CONFERENCES, APRIL, 1958

A COURSE OF 24 SURGERY LECTURES, with 10 Clinical Conferences at certain selected hospitals, will be held from 8TH to 25TH APRIL, 1958. Only a limited number of students can be accepted for the Clinical Conferences.

Fees: Whole course £15 15s.
Lectures only £10 10s.
Single lectures 10s. each.

Applications, accompanied by a cheque for the appropriate fee, should be sent to Mr. W. F. DAVIS, Deputy Secretary, Royal College of Surgeons of England, Lincoln's Inn-fields, W.C.2, from whom further particulars may be obtained. Tel. HOLborn 3474.

THE UNIVERSITY OF LIVERPOOL

FACULTY OF MEDICINE
DEPARTMENT OF ANÆSTHESIA

A COURSE OF POSTGRADUATE INSTRUCTION IN ANÆSTHESIA, limited to 12 students, will be conducted at the University of Liverpool lasting for 1 academic year and commencing 1ST OCTOBER, 1958. This course gives theoretical and practical instruction to students intending to sit for the Fellowship of the Faculty of Anæsthetists. For the purpose of gaining practical experience, the students will be found suitable appointments in recognised General Hospitals within the Liverpool area.

The fee for the course is £75.

Application forms may be obtained from the Reader in Anæsthesia, The University of Liverpool, Liverpool, 3, and should be returned not later than 1st March, 1958.

UNIVERSITY OF LONDON

A LECTURE entitled "Pattern and Form in the Vertebrate Skull; a Study in Plastic Deformation and its Limits" will be delivered by Professor T. S. Westoll (Durham) at 5 P.M. on 6TH FEBRUARY at Middlesex Hospital Medical School, Mortimer-street, W.1.

Admission free, without ticket.

JAMES HENDERSON, Academic Registrar.

UNIVERSITY OF LONDON

INSTITUTE OF OBSTETRICS AND GYNÆCOLOGY
(Incorporating the teaching facilities of Queen Charlotte's Maternity Hospital, Chelsea Hospital for Women, and the Department of Obstetrics and Gynæcology at Hammersmith Hospital)

Applications are invited from graduates with a registrable qualification for enrolment for the SPRING TERM (3RD MARCH to 31ST MAY, 1958). Graduates attend each of the constituent hospitals in turn for clinical work, and attend lectures and special demonstrations at all 3 hospitals. Enrolment fee £3. Tuition fee £36 a term.

General practitioners wishing further experience in obstetrics may be accepted to attend the course at Queen Charlotte's Maternity Hospital for shorter periods—i.e., 2–4 weeks. They will have the opportunity of attending the labour ward in addition to combined classes of lectures and demonstrations at the 3 hospitals of the Institute. Ministry of Health grants are payable to approved general practitioners attending for a period of 1 or 2 weeks.

An INTENSIVE COURSE for those preparing for M.D. and M.R.C.O.G. will be held from 2ND JUNE to 14TH JUNE, 1958.

During the winter vacation, a limited number of graduates may attend the practice of the hospital.

Hostel accommodation is available at Queen Charlotte's Hospital and at Hammersmith Hospital.

Further particulars can be obtained from the Secretary, Institute of Obstetrics and Gynæcology, Chelsea Hospital for Women, Dovehouse-street, London, S.W.3.

UNIVERSITY OF LONDON

A COURSE of 2 lectures on "Bioenergetics": (i) "General Principles"; (ii) "Applications" will be delivered by Dr. A. SZENT-GYÖRGYI (Institute for Muscle Research, Marine Biological Laboratory, Mass.) at 5.30 P.M. on 10TH and 11TH FEBRUARY at University College (Chemistry Lecture Theatre), Gower-street, W.C.1.

Admission free, without ticket.

JAMES HENDERSON, Academic Registrar.

INSTITUTE OF BASIC MEDICAL SCIENCES

ROYAL COLLEGE OF SURGEONS OF ENGLAND
BRITISH POSTGRADUATE MEDICAL FEDERATION
UNIVERSITY OF LONDON

LECTURES AND DEMONSTRATIONS IN ANATOMY, PHYSIOLOGY, PATHOLOGY AND PHARMACOLOGY, SEPTEMBER–DECEMBER, 1958

A course of lectures and demonstrations in the above subjects will be held at the Institute from SEPTEMBER to DECEMBER, 1958. Applications for this Course will be strictly limited.

Fees: Full course £73 10s.
Lectures only £42.

Closing date for applications for the full course: Friday, 11th April, 1958.

Further information may be obtained from Mr. W. F. DAVIS, Secretary, Institute of Basic Medical Sciences, Royal College of Surgeons, Lincoln's Inn-fields, W.C.2. Tel. HOLborn 3474.

UNIVERSITY OF GLASGOW

ADMISSIONS—SESSION 1958–59

NOTICE is hereby given that the number of applicants who may be admitted to the following Faculties is limited:—

Faculty of Arts.
Faculty of Law.
Faculty of Medicine (including Dentistry and Veterinary Medicine).
Faculty of Science.
Faculty of Engineering.

All those who intend to enter any of these Faculties for the first time in October, 1958, must obtain from the undersigned forms of application for admission. The forms are available now and should be returned as follows:—

Faculty of Medicine (Veterinary Medicine), 15th April.
Faculty of Medicine (including Dentistry), 15th May.
All other Faculties, 31st May.

Any applicant who wishes to have a form sent by post should enclose a stamped addressed envelope.

ROBT. T. HUTCHESON, Registrar.

BEIT MEMORIAL FELLOWSHIPS FOR MEDICAL RESEARCH

Notice is hereby given that an ELECTION of Junior Fellows to begin work on 1ST OCTOBER next will take place in May, 1958. Junior Fellowships have successive annual values of £900, £950 and £1000 for 3 years. As a rule, superannuation benefits are provided, to which the successful candidates will be required to contribute 5% of the annual stipend and to which the Trust will make a contribution of 10%. Candidates must have taken a degree in a faculty of a university approved by the Trustees in Her Majesty's Dominions, Protectorates and Mandated Territories, India, Pakistan and the Republic of Ireland, or a medical diploma registrable in the United Kingdom. Elections to Junior Fellowships are rarely made above the age of 35 years.

Applications from candidates must be received not later than 1st April. Candidates must submit evidence that they can be given accommodation in the departments where they propose to work, which must be either in Great Britain or Ireland. Forms of application and all information may be obtained by letter only, addressed to the Secretary, Beit Memorial Fellowships for Medical Research, The Lister Institute, Chelsea Bridge-road, London, S.W.1. For Overseas candidates forms of application may be obtained from the Secretary, South African Medical Council, P.O. Box 205, Pretoria, South Africa; the Director, Commonwealth Office of Education, Box 3879, Sydney, Australia; the Department of Health, Wellington, New Zealand; and the Canadian Medical Association, 244, St. George-street, Toronto, Canada.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY

(UNIVERSITY OF LONDON), 330–332, Gray's Inn-road, W.C.1. LECTURER IN PATHOLOGY. Applications are invited for a post of Lecturer in the Department of Pathology and Bacteriology. The duties will cover assistance in the general work of the department (including the teaching of postgraduate students) and in various research projects. The successful candidate will be encouraged and given the necessary facilities to continue or to commence original work connected with this Specialty, and opportunity to prepare for higher qualifications. He will be given honorary rank as a Senior Registrar by the associated Royal National Throat, Nose and Ear Hospital. Salary according to the revised University scales: £1150–£1100–£1750, plus family allowances where applicable with superannuation provision.

Applications, with the names of 2 referees, should be sent to the Secretary, from whom further information can be obtained, not later than 28th February, 1958.

UNIVERSITY OF BRISTOL. The University invites applications for the post of LECTURER IN SURGERY. The successful candidate will probably be given the status of Senior Registrar in the United Bristol Hospitals during his tenure of the Lectureship, and will be required to take up his duties on 1st June next. The salary scale, in the case of a Lecturer with the status of Senior Registrar, will be £1400–£100–£1900 p.a. according to qualifications and experience, together with superannuation and children's allowances.

Applications, stating age, qualifications and experience, should include the names of 3 referees. Applications (15 copies) should reach the Registrar, from whom further particulars may be obtained, not later than 1 month from the date of appearance of this advertisement.

UNIVERSITY OF DURHAM (Medical School, King's COLLEGE, NEWCASTLE UPON TYNE) AND UNITED NEWCASTLE UPON TYNE HOSPITALS. The University of Durham and the Board of Governors of the United Newcastle upon Tyne Hospitals together, intend to make a combined whole-time appointment of PROFESSOR OF DERMATOLOGY AND CONSULTANT DERMATOLOGIST, with the special object of fostering research and clinical development in dermatology. During the first 5 years the holder of the dual appointment will be remunerated as a Consultant by the Board of Governors and his appointment with the University will be honorary. At the end of this period he will be paid as a Professor by the Council of King's College, Newcastle upon Tyne, on behalf of the University and will hold an honorary appointment as Consultant with the Board of Governors.

Applications are invited for the dual appointment, further particulars of which may be obtained from the undersigned with whom 16 copies of application should be lodged not later than 1st May, 1958. Candidates outside the British Isles may submit 1 copy only. E. M. BETTENSON, Registrar.

University Office, 46, North Bailey, Durham.

UNIVERSITY OF DURHAM (Medical School, King's COLLEGE, NEWCASTLE UPON TYNE) AND UNITED NEWCASTLE UPON TYNE HOSPITALS. Applications are invited for the post of PROFESSOR OF MIDWIFERY AND GYNÆCOLOGY. The post will carry with it an Honorary appointment of consultant status in the Teaching Hospital Group. Salary in accordance with the scale for Clinical Professors with family allowances and F.S.S.U.

Further particulars may be obtained from the undersigned with whom 20 copies of applications, containing names of 3 persons to whom reference may be made, should be lodged not later than 10th March, 1958. Candidates outside the British Isles may submit 1 copy only. E. M. BETTENSON, Registrar.

University Office, 46, North Bailey, Durham.

THE UNIVERSITY OF MANCHESTER. Applications are invited for the post of DEMONSTRATOR IN ANATOMY from candidates with medical qualifications registrable in this country. Salary scale: £850–£50–£1000 p.a. Membership of Children's Allowance Scheme.

Applications should be sent not later than 15th February, 1958, to the Registrar, the University, Manchester 13, from whom further particulars and forms of application may be obtained.

THE UNIVERSITY OF MANCHESTER. Applications are invited for the full-time post of LECTURER IN OTO-LARYNGOLOGY. Salary on a scale rising to £2150 p.a.; initial salary according to qualifications and experience. Membership of the F.S.S.U. and children's allowance scheme.

Applications should be sent not later than 28th February, 1958, to the Registrar, the University, Manchester, 13, from whom further particulars and forms of application may be obtained.

THE QUEEN'S UNIVERSITY OF BELFAST invites applications for a LECTURESHIP IN PHYSIOLOGY, consequent upon the appointment of Dr. R. F. Whelan to the Chair of Physiology in the University of Adelaide. The appointment will date from 1st October, 1958. The salary will be in the range £1300–£50–£2100 with provisions for superannuation. Initial placing on the salary scale will depend upon experience and qualifications. In certain circumstances the salary may rise to £2250.

Applications should be submitted not later than 15th March, 1958. Further particulars may be obtained from G. R. COWIE, M.A., LL.B., Secretary.

Hospital Services: Senior Appointments

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD.

1. CONSULTANT PLASTIC SURGEON, 7 half-days a week, St. Charles' Hospital, Ladbroke-grove, W.10 (575 Beds).

Applications before 3rd March, 1958.

2. CONSULTANT RADIOLOGIST, 2 half-days a week, West End Hospital for Neurology and Neurosurgery, Dean-street, W.1 (35 Beds). Candidates should have experience in neuroradiology.

Applications before 5th March, 1958.

3. CONSULTANT PSYCHIATRIST, 5 half-days a week, Child Guidance Training Centre, 6, Osnaburgh-street, N.W.1, to direct 1 of the Teaching Units. Applicants should be qualified in psycho-analysis. Training and experience in child psychiatry essential.

Applications before 11th March, 1958.

Hospitals and Clinic may be visited by direct appointment.

Application forms obtainable from and returnable to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London, W.1. Applications are invited for the post of Part-time CONSULTANT ORTHOPÆDIC SURGEON AND ASSISTANT CLINICAL DIRECTOR (8–9 sessions), duties to commence as soon as possible after 12th April, 1958.

Applications, stating nationality, date of birth, qualifications, dates and details of present and previous appointments, together with names of 3 referees, to be addressed to the House Governor not later than 26th February.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London, W.1. Applications are invited for the appointment of Part-time CONSULTANT ORTHOPÆDIC SURGEON with special responsibility for hand surgery (2 sessions), duties to commence as soon as possible after 12th April, 1958.

Applications, stating nationality, date of birth, qualifications, dates and details of present and previous appointments, together with names of 3 referees, to be addressed to the House Governor not later than 26th February.

ST. JAMES' HOSPITAL, Balham, S.W.12. Locum SENIOR CASUALTY OFFICER (Senior Hospital Medical Officer grade) required from 17th to 30th March.

Apply to Group Secretary at above address by 12th February, giving full details, including age, and names of 2 referees.

NEWCASTLE REGIONAL HOSPITAL BOARD. Assistant PSYCHIATRIST (Senior Hospital Medical Officer) whole-time at St. Nicholas Hospital, Gosforth, Newcastle upon Tyne, 3. (1200 Beds.) Candidates should normally hold a D.P.M. but applications will be considered from candidates with no previous practical experience in psychiatry who hold a higher qualification, have had wide experience in general medicine, including Senior Registrar posts and intend to obtain a D.P.M. and specialise in psychiatry. The appointment is resident. A suitable house is available. Further particulars from Regional Psychiatrist.

Applications, together with names and addresses of 3 referees, to the Regional Psychiatrist, Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 28 days.

NEWCASTLE REGIONAL HOSPITAL BOARD. Locum CONSULTANT OBSTETRICIAN AND GYNÆCOLOGIST for 9 notional half-days per week for Tees-side Group of hospitals for at least 1 month from end of January, 1958.

Applications, with names and addresses of 3 referees, to Senior Administrative Medical Officer, Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, immediately.

NEWCASTLE REGIONAL HOSPITAL BOARD. Senior CASUALTY OFFICER (medical) whole-time for Newcastle upon Tyne Group of hospitals—main hospital Newcastle General. (838 Beds.) Population covered 393,000. Appointee, together with Senior Surgical Casualty Officer, will be required to undertake work of busy Casualty Department, subject to the supervision of a Senior General Physician, and will also have duties in connection with the medical examinations of staff. Duration of appointment not exceeding 4 years. Salary within scale of £1548 15s.–£2126 5s. p.a. Appointee will be required to reside in close proximity to Newcastle General Hospital. A house may be available. Further particulars from Senior Administrative Medical Officer.

Applications, with names and addresses of 3 referees, to Senior Administrative Medical Officer, Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 28 days.

NEWCASTLE REGIONAL HOSPITAL BOARD. East CUMBERLAND GROUP OF HOSPITALS. ORTHOPÆDIC SURGEON (Senior Hospital Medical Officer status), whole-time or maximum part-time required for East Cumberland Group of hospitals. Main orthopædic, fracture and rehabilitation departments are situated at the Cumberland Infirmary, Carlisle (340 Beds.) The post is primarily concerned with non-operative work. Duties will include work in association with the orthopædic clinics of the Local Health Authorities in the area and the large fracture clinics at the Cumberland Infirmary. Residence to be in or within 5 miles of Carlisle.

Applications, together with names and addresses of 3 referees, to be sent to the Senior Administrative Medical Officer, 72, Warwick-road, Carlisle, within 28 days.

SCOTLAND. NORTH-EASTERN REGIONAL HOSPITAL BOARD. Applications are invited for the post of whole or maximum part-time CONSULTANT PHYSICIAN for duty with the Regional Geriatric Service.

Applications, together with the names of 2 referees, should be forwarded by 20th February, 1958, to the Senior Administrative Medical Officer, 1, Albyn-place, Aberdeen, from whom further particulars and a form of application may be obtained.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the following appointments:—

Whole-time ASSISTANT PSYCHIATRIST at Hartwood Mental Hospital, Shotts, Lanarkshire. Salary (at age 32 and over) on the scale £1653 15s.–£52 10s.–£2126 5s.

Temporary Whole-time ASSISTANT BACTERIOLOGIST at Ayrshire Central Hospital, Irvine, and with duties in the Ayrshire area. The appointment will be for a period of approximately 2 years. Salary (at age 32 and over) on the scale £1653 15s.–£52 10s.–£2126 5s.

Applications (16 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, C.2, not later than 30 days after the publication of this advertisement.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited to fill a vacancy for a CONSULTANT ANÆSTHETIST (part-time, 9 notional half-days a week) to the Hastings Group of hospitals. The post will be vacant from 1st August, 1958. Candidates must have had wide experience in anæsthetics and hold the appropriate qualification. Applicants may visit the hospitals concerned.

Apply, stating nationality, age, sex, qualifications and experience, including details of present appointment and of war service, together with the names and addresses of 3 referees, to: The Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1, not later than 22nd February, 1958.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time or maximum Part-time CONSULTANT RADIOLOGIST required for the Rotherham Group of hospitals.

Application forms and further details from the Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 24th February, 1958.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time or maximum Part-time CONSULTANT RADIOLOGIST required. Duties mainly in hospitals in the Mansfield area.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 24th February, 1958.

SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time ASSISTANT RADIOLOGIST for Leicester Royal Infirmary and Leicester General Hospital. The successful candidate will work under the direction of the Consultant Radiologist in Charge and will be required to reside within 10 miles of Leicester Royal Infirmary. Candidates should possess a diploma in Radiology. Salary scale £1653 15s.–£52 10s.–£2126 5s. p.a.

Application forms and further details from Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 3rd March, 1958.

AUSTRALIA. THE ROYAL MELBOURNE HOSPITAL invites applications from suitably qualified medical practitioners for appointment as SURGEON TO OUTPATIENTS. This is an honorary appointment, and carries full membership of the Medical Staff. Appointment is for a period of 5 years, but the appointee will be eligible for reappointment at the end of that period.

Applications, on the prescribed form obtainable from the undersigned, close 14th March, 1958. Further details are obtainable from the Medical Superintendent.

AFTON MORCOM, Manager.

Hospital Services: Junior Appointments

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. HOUSE SURGEON/CASUALTY OFFICER. Combined post. Resident. Vacant early February. House Officer grade, not pre-registration and not recognised for F.R.C.S.

Apply, enclosing copies of 2 recent testimonials, to Hospital Secretary, with whom arrangements can be made to view the Hospital.

BROMPTON HOSPITAL, S.W.3. Applications invited for the post of NON-RESIDENT HOUSE PHYSICIAN for which there are 3 vacancies, for 6 months from 1st April, 1958. Duties include work in Outpatient Department and wards. Salary at the rate of £577 10s. p.a

Applications, stating age, qualifications with dates, nationality and appointments held, together with copies of testimonials, by 8th February, 1958, to KENNETH A. F. MILES, House Governor.

CONNAUGHT HOSPITAL, Walthamstow, E.17. (123 Beds.) HOUSE PHYSICIAN required for a period of 6 months. Post vacant 8th March, 1958.

Applications, with full details and copies of 2 recent testimonials, should be sent immediately to the Secretary, Forest Group Hospital Management Committee, Langthorne-road, E.11.

DULWICH HOSPITAL, East Dulwich-grove, S.E.22. HOUSE SURGEON (general surgical duties) required from 1st February. Recognised pre-registration post.

Apply, giving age, qualifications and experience (if any) with copy testimonials or names of 2 referees, to Group Secretary, Camberwell Hospital Management Committee, Dulwich Hospital, as soon as possible.

EASTERN HOSPITAL (Fevers), London, E.9. Applications are invited for the resident post of SENIOR HOUSE OFFICER. The post, which offers good opportunities for post-graduate study, is for 1 year in first instance. Duties may include some work in Chest Unit and E.N.T. Department.

Applications should be sent to the Group Secretary, Hackney Hospital, E.9, quoting EH/SHO.

ELIZABETH GARRETT ANDERSON HOSPITAL, Euston-road, N.W.1. (ROYAL FREE HOSPITAL GROUP.) Applications are invited from pre-registration and registered Women medical practitioners for the post of OBSTETRIC HOUSE SURGEON (recognised for the M.R.C.O.G.). Duties to commence 1st March, 1958. Appointment for 6 months. Salary in accordance with Ministry of Health scale for House Officers.

Applications, with copies of 3 recent testimonials, to be sent to the Secretary, Elizabeth Garrett Anderson Hospital, by 11th February, 1958.

FOUNTAIN GROUP HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. SENIOR PSYCHIATRIC REGISTRAR required for duty in the above Group which comprises some 800 Beds for mental deficiency, mainly for children. There is an Outpatient Department and a considerable amount of teaching and research is done. Possession of D.P.M. or D.C.H., preferably with a higher medical qualification, is desirable. Experience of children's diseases is an advantage. Candidates may visit the Hospital.

Application forms and further details from Secretary, Fountain Hospital, Tooting-grove, London, S.W.17. Completed application forms should reach the Secretary by 14th February, 1958.

FULHAM HOSPITAL, St. Dunstan's-road, Hammersmith, W.6. Applications invited for appointment as ORTHOPÆDIC REGISTRAR (full-time, non-resident) to commence 12th April, 1958. Wide variety of orthopædics and traumatic surgery is handled in the Department. Post recognised for F.R.C.S. Candidates may visit Hospital by arrangement with Hospital Secretary.

Applications (5 copies) to be submitted by 14th February, 1958, on forms obtainable from, and returnable to, Group Secretary, 5, Collingham-gardens, London, S.W.5. (130.L.)

HACKNEY HOSPITAL, London, E.9. (General—841 Beds.) Applications for the 6-month resident appointment, now vacant, of CASUALTY OFFICER AND HOUSE SURGEON (E.N.T.) (registered House Officer grade) should be sent to Secretary, above address, quoting HH/CHO.

KING'S COLLEGE HOSPITAL, Denmark Hill, S.E.5. Applications are invited for the post of REGISTRAR to the Radiotherapy Department. The appointment is a full-time one, tenable from 1st March, 1958, renewable annually from 1st October, 1958.

Applications, giving details of age, qualifications and experience, together with the names of 2 referees, should be submitted to the undersigned not later than 15th February, 1958.

S. W. BARNES, House Governor.

GROUP LABORATORY, Mile End Hospital, Bancroft-road, London, E.1. Locum REGISTRAR in Pathology required to commence duty on 15th February, 1958.

Applications, stating age, qualifications and experience, to be sent to the Secretary, Stepney Group Hospital Management Committee, Mile End Hospital, Bancroft-road, E.1, not later than 5th February, 1958.

LONDON CHEST HOSPITAL (Country Branch). HOSPITALS FOR DISEASES OF THE CHEST. REGISTRAR in Clinical Pathology (Registrar grade). A vacancy occurs at the country branch near Letchworth. The appointment is a whole-time one and will be for 1 year in the first instance and the holder may be resident or non-resident.

Applications, stating age, qualifications with dates, and previous experience, together with copies of 3 testimonials, should reach the House Governor, London Chest Hospital, E.2, not later than 22nd February, 1958.

MEMORIAL HOSPITAL, Shooters Hill, Woolwich, S.E.18. SENIOR HOUSE OFFICER (Casualty Department), vacant 24th February. Recognised for F.R.C.S. 6 months' resident appointment and may then be renewed. Salary £819 10s. p.a., less £150 p.a. for residence.

Apply to Group Secretary, Memorial Hospital, Woolwich, S.E.18.

MILE END HOSPITAL, Bancroft-road, London, E.1. (484 Beds.) HOUSE SURGEON (pre- or post-registration). Post vacant 22nd February, 1958.

Application forms, obtainable from Physician-Superintendent, to be returned by 7th February, 1958, with copies of not more than 3 testimonials.

MOTHERS' HOSPITAL (Salvation Army), London, E.5. (Maternity, 110 Beds.) Applications for the 12-month resident appointment, vacant 1st March, of SENIOR HOUSE OFFICER (obstetrics) (recognised for M.R.C.O.G.) should reach Group Secretary, Hackney Hospital, E.9, by 10th February, quoting MH/SHO.

NATIONAL HOSPITALS FOR NERVOUS DISEASES. Applications are invited from registered medical practitioners for the appointment of NON-RESIDENT HOUSE PHYSICIAN at The National Hospital, Queen-square, W.C.1, to commence 1st May, 1958. There are 2 vacancies. These posts carry the grade of Senior House Officer. The appointments will be for 6 months.

Applications, with names of 3 referees, to be sent to the undersigned not later than 21st February, 1958.

H. EWART MITCHELL, Secretary to the Board of Governors.
The National Hospitals for Nervous Diseases,
Queen-square, W.C.1.

NATIONAL HOSPITALS FOR NERVOUS DISEASES. Applications are invited from registered medical practitioners for the appointment of REGISTRAR (whole-time) to the Lysholm X-ray Department at The National Hospital, Queen-square, to commence approximately 1st April, 1958. This post usually carries the grade of Senior Registrar. Applicants should hold a Diploma in Diagnostic Radiology and have had experience in general radiology. The appointment will be for 1 year in the first instance.

Applications, with names of 3 referees, to be sent to the undersigned not later than 21st February, 1958.

H. EWART MITCHELL, Secretary to the Board of Governors.
The National Hospitals for Nervous Diseases,
Queen-square, London, W.C.1.

PLAISTOW HOSPITAL, Samson-street, London, E.13. (211 Beds.) Applications are invited for the appointment of RESIDENT HOUSE OFFICER (post-registration or pre-registration second post) for 6 months commencing 1st April, 1958, in the Chest Unit and Infectious Diseases Unit. Some experience in diseases of the chest desirable. The position offers good opportunities for experience in general medicine.

Applications, with copies recent testimonials, to Hospital Secretary by 12th February.

QUEEN ELIZABETH HOSPITAL FOR CHILDREN, Hackney-road, E.2, Shadwell, E.1, BANSTEAD, SURREY. HOUSE OFFICER appointment for 2 consecutive periods of 6 months commencing 1st April, 1958, first period House Physician, Hackney-road, second period House Surgeon, Hackney-road (2 months) and Casualty Officer, Hackney-road (4 months).

Application forms may be obtained from the Secretary at Hackney-road, and should be returned with copies of not more than 3 testimonials, not later than 15th February, 1958.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, London, W.1. Applications are invited for the appointment of SENIOR ORTHOPÆDIC REGISTRAR (full-time), non-resident, duties to commence as soon as possible. Applicants must be Fellows of one of the Royal Colleges of Surgeons. During the tenure of office 1 year may be spent at the Luton and Dunstable Hospital and 6 months at The Hospital for Sick Children, Great Ormond-street. In the event of a Registrar of the Royal National Orthopædic Hospital being appointed to the above vacancy, there will be a vacancy for the post of Registrar and applicants may, therefore, apply for either post.

Applications to be received not later than 21st February. Forms of application can be obtained from the House Governor, 234, Great Portland-street, London, W.1.

ROYAL NATIONAL THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, W.C.1, and Golden-square, W.1, with which is associated the Institute of Laryngology and Otology (University of London). GENERAL PRACTITIONER CLINICAL ASSISTANTS and OUTPATIENT ASSISTANTS. These appointments give those engaged in general practice who are able to attend for 2 sessions weekly over a period of 15 months commencing in March, 1958, the opportunity of widening their clinical experience in the specialty. At the end of 3 months' training period the holders will be appointed as Outpatient Assistants with remuneration under paragraph 10 (b) of the National Health Service terms and conditions of service.

Further particulars may be obtained from the House Governor.

SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN, Clapham Common, S.W.4. Applications are invited from pre-registration and registered Female medical practitioners for the appointment of HOUSE SURGEON. Vacant 24th April, 1958, for a period of 6 months. Recognised for the F.R.C.S.

Forms of application from the Hospital Secretary.

SOUTH WESTERN HOSPITAL, Landor-road, London, S.W.9. RESIDENT HOUSE SURGEON (Senior House Officer grade) required to take charge of 32 surgical beds under the direction of the Surgical Consultant of Lambeth Hospital, Kennington; also to work under the E.N.T. Surgeon at the South Western Hospital. Post recognised for the F.R.C.S. Vacant 21st February.

Form of application from the Hospital Secretary to be returned by 15th February, 1958.

SOUTH WESTERN HOSPITAL, Landor-road, S.W.9. Applications are invited from Women candidates for the post of HOUSE SURGEON (pre-registration) at the above Hospital. Vacant 22nd February, 1958. Duties include general surgery and the successful candidate will also be required to relieve the House Surgeon at the Annie McCall Maternity Hospital.

Application forms from the Hospital Secretary to be returned by 14th February, 1958.

ST. GILES' HOSPITAL, Camberwell, S.E.5. House SURGEON (orthopædic duties) required. Pre- or post-registration post.

Apply, giving age, qualifications and previous posts (if any), with copy testimonials or names of 2 referees, to Group Secretary, Camberwell Hospital Management Committee, Dulwich Hospital, S.E.22.

ST. THOMAS'S HOSPITAL, London, S.E.1. Registrar to the Chest Department for a period of 1 year in the first instance.

Applications, naming 2 referees, to the Clerk of the Governors by 7th February, 1958.

ST. THOMAS'S HOSPITAL, London, S.E.1. Senior REGISTRAR to the Ophthalmic Department required for a period of 1 year in the first instance to carry out 6 sessions per week.

Applications, including names and addresses of 2 referees, to the Clerk of the Governors by 10th February, 1958. Candidates may be required to attend for interview on 12th February.

ST. THOMAS'S HOSPITAL, London, S.E.1. Locum SURGICAL REGISTRAR (1 vacancy) for approximately 1 year. There are 4 Surgical Registrar posts at St. Thomas's and in the Group, which are interchangeable, 2 of them being resident and 2 non-resident.

Applications, naming 2 referees, to the Clerk of the Governors by 7th February, 1958.

WESTMINSTER HOSPITAL, St. John's-gardens, S.W.1. Applications invited for post of RESEARCH ASSISTANT in Cardiac Department (Medical Registrar status) for 1 year in first instance from 1st April, 1958.

Applications (6 copies), with names of 3 referees, to House Governor by 15th February.

WESTMINSTER HOSPITAL. Applications invited for post of REGISTRAR to Department of Chemical Pathology (Vincent-square Laboratories) for 1 year in first instance from 1st April.

Applications (5 copies), with names of 2 referees, to Secretary, Vincent-square Laboratories, Vauxhall Bridge-road, S.W.1, by 14th February.

WHIPPS CROSS HOSPITAL, Leytonstone, E.11. Leyton-STONE (NO. 10) HOSPITAL GROUP. Applications are invited for the post of HOUSE PHYSICIAN (post or pre-registration), general medicine, at above Hospital, vacant 21st March, 1958.

Application forms obtainable from the Hospital Secretary to be returned by 10th February, 1958.

WHITTINGTON HOSPITAL, Highgate, London, N.19. Locum Tenens SENIOR MEDICAL REGISTRAR (general medicine), non-resident, required from 17th February, 1958, for 3 months in the first instance. Must have had experience in large medical department and should hold higher medical qualifications.

Apply Medical Superintendent (ARC. 3070. Ext. 440).

ABERDEEN GENERAL HOSPITALS. Board of Manage-MENT. Applications are invited for the appointment of a REGISTRAR in Surgery with duties in the Aberdeen Royal Infirmary and other hospitals. The post is a whole-time one and is non-resident. Salary and conditions of service in accordance with the terms issued by the Department of Health for Scotland.

Applications, giving details of qualifications and experience, with the names of 2 referees, should be lodged with the Secretary, Aberdeen General Hospitals, P.O. Box No. 92, 62, Queen's-road, Aberdeen, within 14 days of the appearance of this advertisement.

ASHFORD HOSPITAL, Ashford, Middlesex. (500 Beds.) STAINES GROUP HOSPITAL MANAGEMENT COMMITTEE. Required, RESIDENT HOUSE PHYSICIAN for general medical duties. 6-month appointment, vacant 8th March, 1958. Preference given to pre-registration candidates.

Applications, stating age, qualifications and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital.

BARNSTAPLE. NORTH DEVON INFIRMARY. (105 Beds.) HOUSE PHYSICIAN (pre-registration) required in March.

Applications, naming 2 referees, to Group Secretary, 19, Alexandra-road, Barnstaple, N. Devon.

BATLEY. THE GENERAL HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER (recognised for F.R.C.S.) which is now vacant. The hospital is entirely surgical and deals with orthopædics, general surgery, ophthalmology and E.N.T. This post is primarily for orthopædics and E.N.T. but is the senior resident post in the hospital. If required, married accommodation can be made available.

Detailed applications, including names of 2 referees, must be sent to Administrative Officer, The General Hospital, Carlinghow Hill, Batley.

BARROW-IN-FURNESS. RISEDALE MATERNITY HOSPITAL. BARROW AND FURNESS HOSPITAL MANAGEMENT COMMITTEE. Obstetric and Gynæcology Department. Applications are invited for the resident post of SENIOR HOUSE OFFICER at the above Hospital. Post available middle March, 1958. Hospital approved for D.Obst.R.C.O.G.

Applications to the Group Secretary, 105, Abbey-road, Barrow-in-Furness.

BEDFORD GENERAL HOSPITAL. (436 Beds.) House SURGEON post vacant immediately. Pre- or post-registration, recognised for F.R.C.S. Post offers exceptional opportunities for general experience in busy acute surgical units.

Applications, with copies of testimonials, to be sent immediately to Group Secretary, Bedford Group Hospital Management Committee, 3, Kimbolton-road, Bedford.

BEVERLEY, YORKSHIRE. WESTWOOD HOSPITAL. (229 acute beds.) ORTHOPÆDIC HOUSE SURGEON (first, second or third post), vacant now. Offers good opportunity for general experience in busy acute general hospital. Approved pre-registration post. Fully registered practitioners may apply. Recognised for F.R.C.S.

Apply Group Secretary.

BEVERLEY, YORKSHIRE. WESTWOOD HOSPITAL. (229 Beds.) Locum ORTHOPÆDIC HOUSE SURGEON (Senior House Officer or House Officer grading according to experience).

Applications to Group Secretary.

BEVERLEY, YORKSHIRE. WESTWOOD HOSPITAL. ASSISTANT PATHOLOGIST (Senior House Officer grade) required for Area Laboratory. Offers experience in all branches of pathology.

Detailed applications to Group Secretary.

BIRMINGHAM ACCIDENT HOSPITAL, Bath-row, BIRMINGHAM, 15. (215 Beds and 8 House Surgeons.) HOUSE SURGEON (resident). Vacant end February. Hospital is largest traumatic unit in country and treats over 50,000 new patients each year. Recognised for purpose of casualty by R.C.S. (Eng.). Teaching programme by consultant staff. 6-month appointment, some of which may be spent in 42-Bedded Medical Research Council's Burns Unit.

Apply, naming 2 referees, to Administrator.

BIRMINGHAM REGIONAL HOSPITAL BOARD.

(1) Coventry No. 20 Group, Coventry and Warwickshire Hospital, Coventry

(*a*) REGISTRAR (anæsthetics), Coventry and Warwickshire Hospital, Coventry. Experience specialty essential. Recognised F.F.A. R.C.S. Resident.

(*b*) REGISTRAR (orthopædic surgery). Hospital of St. Cross, Rugby (156 Beds). Vacant April. Some experience of traumatic surgery essential. Recognised F.R.C.S. Married accommodation available if required.

(2) North Staffordshire Royal Infirmary (455 Beds). Stoke-on-Trent Group, Princes-road, Stoke-on-Trent

Whole-time REGISTRAR in Anæsthetics, Resident/non-resident. (Possibility of housing accommodation). Higher qualification desirable. Recognised for D.A. and F.F.A. Medical library available.

(3) Mid-Worcestershire Group, Birmingham-road, Bromsgrove

Locum REGISTRAR (obstetrics/gynæcology). Duties at Bromsgrove General Hospital (423 Beds), (7 notional half-days), and Dudley and Stourbridge Group (4 notional half-days).

(4) Wolverhampton Group, The Royal Hospital, Wolverhampton

REGISTRAR (orthopædics and traumatic surgery). The Royal Hospital, Wolverhampton. All types of traumatic and orthopædic conditions, also industrial work and rehabilitation, which is carried out at a special unit of 60 beds. Married quarters available.

(5) Birmingham (Selly Oak) Group, Oak Tree-lane, Birmingham, 29

REGISTRAR (radiology), Selly Oak Hospital (1055 Beds), with associated Maternity, Eye, E.N.T. and Infectious Diseases Hospitals. All forms of radiodiagnostic work undertaken. Hospital recognised for Part 2 D.M.R.D. Diploma in radiology desirable but consideration given to holders of Part 1 only.

Application forms from Group Secretaries, to be returned by 10th February, 1958.

BIRMINGHAM. THE UNITED BIRMINGHAM HOS-PITALS. Applications are invited for the post of MEDICAL REGISTRAR (resident or non-resident) for duties at the General Hospital. M.R.C.P. essential. This post offers exceptional opportunities for clinical experience and research. In the case of married applicants, housing accommodation outside the Hospital may be available. The successful candidate will be expected to take his turn in reception duty which is arranged on a rota system.

Application forms may be obtained from the Secretary, United Birmingham Hospitals, Queen Elizabeth Hospital, Birmingham, 15, and should be returned to him not later than 15th February, 1958.

BIRMINGHAM, 9. YARDLEY GREEN HOSPITAL. THORACIC SURGICAL UNIT. (66 Beds.) Vacancy for SENIOR HOUSE OFFICER. No previous experience in thoracic surgery necessary.

Applications, stating age, qualifications, training and experience, together with names of 2 referees, to be addressed to Group Secretary, Yardley Green Hospital, Birmingham, 9.

BRISTOL. COSSHAM/FRENCHAY HOSPITAL MAN-AGEMENT COMMITTEE. Frenchay Hospital. SENIOR HOUSE OFFICER, Regional Department of Neurosurgery. Vacancy occurs end of March, 1958, for the above post, tenable for 6 to 12 months. The post offers useful surgical experience and the opportunity of gaining a working knowledge of neurological diagnosis. Recognised for F.R.C.S.

Applications to the Secretary, Frenchay Hospital, quoting "N.S.F." 2 referees required.

BRISTOL. COSSHAM/FRENCHAY HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER in Pathology required 1st April, 1958, at Frenchay Hospital (542 Beds, general medicine, general surgery and thoracic, neurosurgical and plastic units for the South West). Post may be resident or non-resident but residence essential when on call. It provides training in all branches of clinical pathology. Laboratory is recognised for Diploma in Pathology. Some duties in connection with the Regional Blood Transfusion Service.

Detailed applications, quoting 2 referees, should reach the Group Secretary, Frenchay Hospital, Bristol, by 10th February, 1958.

BLACKBURN AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE.

Royal Infirmary, Blackburn

HOUSE SURGEONS (2) required for end of January, 1958. Posts recognised for F.R.C.S. and approved for pre-registration purposes.

Victoria Hospital, Accrington (114 Beds)

HOUSE SURGEON required for 6th March, 1958. Post recognised for F.R.C.S. and approved for pre-registration purposes.

Applications to Group Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

BOURNEMOUTH (near). CHRISTCHURCH HOSPITAL, CHRISTCHURCH, HAMPSHIRE. (334 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON (pre-registration interne) required for post becoming vacant on 18th March, 1958.

Applications to the Hospital Secretary.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL, Shelley-road, BOSCOMBE. BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the immediate appointment of GENERAL HOUSE SURGEON. The post is recognised for the F.R.C.S. examination and pre-registration purposes.

Application to the Hospital Secretary.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL. (494 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE PHYSICIAN. The appointment, which becomes vacant on 17th February, 1958, is recognised for pre-registration purposes.

Applications to the Hospital Secretary.

BRIGHTON AND LEWES HOSPITAL MANAGEMENT COMMITTEE GROUP HOSPITALS. (78 Beds.) SENIOR HOUSE OFFICER for duties in the E.N.T. Department of the above Hospitals. Vacant beginning of February. Recognised for F.R.C.S. and D.L.O.

Applications, with details of experience, &c., together with the names of 2 referees, to the Administrative Officer, Royal Sussex County Hospital, Brighton, 7.

BRIGHTON GENERAL HOSPITAL. Applications are invited for the appointment of HOUSE SURGEON to the Orthopædic Unit. Salary in accordance with national scales. This post is recognised as a pre-registration appointment. Vacant 12th February, 1958.

Applications, stating age, qualifications, and experience, and giving the names of 2 referees, should be sent to the Physician-Superintendent, Brighton General Hospital, Elm-grove, Brighton.

BRIGHTON, 7. ROYAL SUSSEX COUNTY HOSPITAL. (314 Beds.) RESIDENT PATHOLOGIST (Senior House Officer grade) required for Area Laboratory. Good experience in all branches of clinical pathology.

Applications, stating age, qualifications, experience and naming 2 referees, to the Administrative Officer.

BRIGHTON, 7. ROYAL SUSSEX COUNTY HOSPITAL. (314 Beds.) Locum RESIDENT ANÆSTHETIST (Senior House Officer) required at the above Hospital for 2 weeks, commencing 9th February, 1958.

Applications, stating usual particulars and naming 2 referees, to the Administrative Officer.

BRIGHTON. SUSSEX EYE HOSPITAL. (56 Beds.) HOUSE SURGEON required 11th February, 1958. Recognised for F.R.C.S. and D.O. Successful candidate will be considered for senior post (Senior House Officer) on completion of 6 months.

Applications, stating age, qualifications and experience and naming 2 referees, to the Administrative Officer.

BROMSGROVE, WORCESTERSHIRE. BARNSLEY HALL HOSPITAL (for mental and nervous diseases—750 Beds.) Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER. Excellent opportunities for a young man to study in a modern mental hospital, modern treatments and up-to-date psychiatry. House available. Remuneration will be in accordance with the terms and conditions of service issued by the Ministry of Health.

Applications, stating age and experience, together with the names of 3 referees, to the Medical Superintendent.

BURNLEY GENERAL HOSPITAL. (641 Beds.) Resident HOUSE OFFICER (gynæcology). The appointment is recognised as a pre-registration post and also recognised for M.R.C.O.G. Subject to satisfactory service, the successful applicant will be favourably considered for an obstetric appointment. Position vacant end of February.

Applications, with 2 references, to Group Secretary, Burnley and District Hospital Management Committee, Burnley General Hospital, Burnley.

BURNLEY GENERAL HOSPITAL. (641 Beds.) Resident HOUSE OFFICERS (surgical). The appointments are approved as pre-registration posts and recognised for F.R.C.S. Subject to satisfactory service, the successful applicants will be favourably considered for appointment as a House Physician at the termination of their contract as Surgical House Officers. Positions now vacant.

Applications, with 2 references, to Group Secretary, Burnley and District Hospital Management Committee, Burnley General Hospital.

BROXBURN, WEST LOTHIAN. BANGOUR GENERAL HOSPITAL (15 miles from Edinburgh). HOUSE SURGEON required 1st April, 1958 (pre-registration post), for General Surgical Unit. Salary and conditions of service in accordance with regulations.

Applications to Group Secretary, Board of Management, Bangour General Hospital, Broxburn, West Lothian.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE. BURY GENERAL HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER in Casualty and Orthopædics. This post is recognised for the F.R.C.S.

Full details, including nationality, age, qualifications and experience, with the names of 2 referees, should be forwarded to H. WILKINSON, Group Secretary, Bury General Hospital, Bury, Lancashire.

CAERPHILLY HOSPITAL. (General hospital, 228 Beds— 6 miles from Cardiff.) HOUSE SURGEON. Post recognised for F.R.C.S.

Apply to Hospital Secretary.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (277 Beds.) The post of GENERAL SURGICAL AND UROLOGICAL HOUSE SURGEON (pre-registration or third post), which is recognised for the F.R.C.S., is now vacant. National Health Service salary and conditions.

Applications, together with copies of 2 recent testimonials, to be addressed to the Hospital Secretary at the above Hospital.

CARLISLE. CUMBERLAND INFIRMARY, CITY GENERAL HOSPITAL AND CITY MATERNITY HOSPITAL. Applications are invited for the following appointments :—

HOUSE OFFICERS, recognised for pre-registration purposes.
2 general surgery (recognised for F.R.C.S.).
1 gynæcology and obstetrics.

SENIOR HOUSE OFFICERS.
1 orthopædics.
1 general surgery (recognised for F.R.C.S. examination).

Applications to be sent immediately to the Group Secretary, Cumberland Infirmary, Carlisle.

CARLUKE, LANARKSHIRE. LAW HOSPITAL. Applications are invited for the posts of JUNIOR HOSPITAL MEDICAL OFFICER and HOUSE SURGEON in Orthopædic Surgery at Law Hospital, Carluke (790 Beds). The unit consists of 120 Beds and deals with acute orthopædic and accident work from a large part of Lanarkshire, and offers excellent experience.

Applications, giving full details, should be submitted to the Group Medical Superintendent, Law Hospital, Carluke.

CARLUKE, LANARKSHIRE. LAW HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER (medical) for 1st February, 1958.

Applications, stating age, qualifications and previous experience, together with the names of 2 referees, should be submitted to the Group Medical Superintendent, Law Hospital, Carluke.

CARLUKE, LANARKSHIRE. LAW HOSPITAL. Applications are invited for the post of RESIDENT HOUSE SURGEON (pre- or post-registration) for the 6 months commencing 1st February, 1958.

Applications, stating age, qualifications and any previous experience, together with the names of 2 referees, should be sent to the Group Medical Superintendent, Law Hospital, Carluke.

CARMARTHEN. WEST WALES GENERAL HOSPITAL. (188 Beds.) WEST WALES HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of Pre-registration HOUSE OFFICER (surgical) (recognised by the Royal College of Surgeons, and for pre-registration service), which will become vacant on 1st February, 1958. Salary and conditions of service as laid down by the Ministry of Health.

Applications, stating age, qualifications, experience and nationality, with names and addresses of 3 referees, to the Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

CARMARTHEN. WEST WALES GENERAL HOSPITAL. (188 Beds.) WEST WALES HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (surgical) (recognised by the Royal College of Surgeons), which is now vacant. Salary and conditions of service as laid down by the Ministry of Health.

Applications, stating age, qualifications, experience, nationality, and names and addresses of 3 referees, to the Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

CARSHALTON, SURREY. QUEEN MARY'S HOSPITAL FOR CHILDREN. (A general children's hospital of 550 Beds.) RESIDENT MEDICAL REGISTRAR required to a firm comprising 180 Beds, including acute medical (60 Beds), poliomyelitis, rheumatism and long-stay wards and with certain medical administrative duties.

Applications, on forms obtainable from the Group Secretary, should be returned immediately.

CARSHALTON, SURREY. ST. HELIER HOSPITAL. CASUALTY OFFICER (Senior House Officer). Post recognised for F.R.C.S. Vacant early April.

Applications, stating age, qualifications and experience, with copies of testimonials and the names of 2 referees, should be sent to the Group Secretary at above address.

CHELMSFORD AND ESSEX HOSPITAL. (161 Beds.) Applications are invited for the post of RESIDENT HOUSE SURGEON. Pre-registration post. The post offers good surgical experience. Recognised for the F.R.C.S.

Applications, together with 2 recent testimonials, to the Secretary, Chelmsford Hospital Management Committee, London-road, Chelmsford.

CHERTSEY, SURREY. ST. PETER'S HOSPITAL (late Botleys Park War Hospital). (430 Beds.) Locum GENERAL SURGICAL REGISTRAR required from 17th February to 9th March, 1958, inclusive.

Applications to Physician-Superintendent, St. Peter's Hospital, Chertsey, as soon as possible.

CHERTSEY, SURREY. ST. PETER'S HOSPITAL (late Botleys Park War Hospital). (430 Beds.) RESIDENT HOUSE SURGEON (Senior House Officer or Intern) required for Gynæcological (30 Beds) and E.N.T. (approximately 14 Beds) Departments. Salary in accordance with terms and conditions of National Health Service. Post vacant 1st February, 1958.

Applications, together with names and addresses of referees, to Physician-Superintendent, St. Peter's Hospital, as soon as possible.

CHELTENHAM GENERAL HOSPITAL. (220 Beds.) HOUSE SURGEON required (pre- or post-registration). Vacant now. The post offers a wide experience in general surgery, gynæcology, and orthopædic surgery. Post recognised for the F.R.C.S.

Applications, with names of 2 referees, to be sent to Secretary, General Hospital, Cheltenham.

CHESTERFIELD ROYAL HOSPITAL. House Physician (Senior House Officer grade) required mid-February at the above Hospital for 54-Bed Medical Unit. Post offers good experience in general medicine, and in pædiatrics, diabetics, and dermatology. National salary and conditions.

Further particulars obtainable on request from the Group Secretary, Chesterfield Hospital Management Committee, to whom applications should be submitted immediately.

CHESTERFIELD. SCARSDALE HOSPITAL. Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER for Geriatric Unit and for duties at Penmore Hospital. Full Consultant services. Excellent scope for doctor interested in this specialty. House available on service tenancy.

Applications, giving full particulars, with the names of 3 referees, to Group Secretary, Chesterfield Hospital Management Committee, at Chesterfield Royal Hospital.

CHESTER-LE-STREET, Co. DURHAM. GENERAL HOSPITAL. HOUSE SURGEON (general surgery). Approved pre-registration appointment, and recognised under the F.R.C.S. regulations. Post vacant 1st February, 1958.

Apply, with names and addresses of 2 referees, to Group Secretary, Dryburn Hospital, Durham.

COLCHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for :—

Essex County Hospital, Colchester (189 Beds)

Post of HOUSE SURGEON. Recognised for F.R.C.S.

First, second, third or pre-registration post, tenable for 6 months.

St. Mary's Hospital, Colchester

Post of SENIOR HOUSE OFFICER (Resident Medical Officer) for Geriatric Unit. Includes duties in connection with medical and surgical patients accommodated at hospital and duties at Essex County Hospital (general medical). Post tenable for 6 or 12 months. Resident.

Applications, with copies of 3 testimonials, to Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

CREWE AND DISTRICT MEMORIAL HOSPITAL. (106 Beds—acute, and continuation 32 Beds.) SENIOR HOUSE OFFICER (casualty) required. Approved for F.R.C.S. Vacant March. Modern well equipped department. Whitley Council salary scale and conditions of service.

Applications, stating age, qualifications, &c., with names of 2 referees, to reach the Group Secretary, South Cheshire Hospital Management Committee, Barony Hospital, Nantwich, Cheshire, not later than 8th February, 1958.

DERBY. DERBYSHIRE ROYAL INFIRMARY. (416 Beds.) SENIOR HOUSE OFFICER (orthopædic). Vacant immediately. Recognised for 6 months' "unspecified" training for F.R.C.S.

Apply, giving full details and 2 names for reference, to Secretary.

DERBY. DERBYSHIRE ROYAL INFIRMARY. (416 Beds.) HOUSE PHYSICIAN (pre-registration) or SENIOR HOUSE OFFICER (general medicine). Vacant late February.

Apply, stating full details with copies of 2 testimonials, to Secretary.

DERBY. DERBYSHIRE ROYAL INFIRMARY. (416 Beds.) HOUSE SURGEON (pre-registration) or SENIOR HOUSE OFFICER (general surgery). 2 posts vacant 9th and 19th March. Recognised for F.R.C.S. if held by Senior House Officer.

Apply, stating full details, with copies of 2 recent testimonials, to Secretary.

DERBY. DERBYSHIRE HOSPITAL FOR WOMEN, FRIAR GATE. HOUSE SURGEON (pre-registration) or SENIOR HOUSE OFFICER (gynæcology) required. Recognised for M.R.C.O.G. in gynæcology only.

Apply, stating full details, with copies of 2 recent testimonials, to Hospital Secretary, Derbyshire Hospital for Women.

DUDLEY, STOURBRIDGE AND DISTRICT HOSPITAL GROUP, BIRMINGHAM REGION.

The Corbett Hospital, Stourbridge (114 Beds)

HOUSE OFFICER (surgical), pre-registration. Post vacant now.

Wordsley Hospital, near Stourbridge (478 Beds)

HOUSE OFFICER (surgical), pre-registration. Post vacant now.

Prestwood Sanatorium, near Stourbridge (199 Beds. Tuberculosis)

Locum JUNIOR HOSPITAL MEDICAL OFFICER, resident, required for a period of 1 year.

Apply Group Secretary, Guest Hospital, Dudley, Worcs.

DORCHESTER. DORSET COUNTY HOSPITAL. (109 Beds.) HOUSE SURGEON required for resident, pre-registration post now vacant and tenable for 6 months. Recognised for F.R.C.S. examinations.

Applications, stating age, qualifications, together with copy testimonials, to Group Secretary, West Dorset Hospital Management Committee, Damers-road, Dorchester, Dorset, immediately.

DORCHESTER, DORSET. HERRISON HOSPITAL MANAGEMENT COMMITTEE. (1030 mental beds.) Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER at Herrison Hospital, Dorchester, Dorset. The post offers opportunities of gaining experience in all branches of Psychiatry. Salary £852 10s.–£55–£1182 10s. p.a. Post subject to Whitley Council conditions of service and superannuable in accordance with the National Health Service (superannuation) regulations. Full board-residence available for a single officer.

Applications in writing, giving details of age, qualifications, and experience, to the Medical Superintendent as soon as possible.

DEWSBURY. THE GENERAL HOSPITAL. Applications are invited for the immediate vacancy of HOUSE OFFICER (general surgery and E.N.T.).

Applications, giving full details, to the Administrative Officer at the Hospital.

EAST GRINSTEAD. QUEEN VICTORIA HOSPITAL. RESIDENT HOUSE OFFICER, Male or Female, required immediately for General Hospital. Appointment for 6 months in first instance; recognised for pre-registration purposes, and for F.R.C.S. examination.

Apply, stating age, and experience, with names of 3 referees, to Hospital Secretary.

EDGWARE GENERAL HOSPITAL, Edgware, Middlesex. RESIDENT GYNÆCOLOGICAL HOUSE SURGEON for above Hospital. 6 months' appointment. Post vacant 28th February, 1958. Recognised for M.R.C.O.G. purposes.

Applications, stating age, qualifications, experience and enclosing copies of up to 3 recent testimonials, to Medical Director of Hospital by 14th February, 1958.

EDGWARE GENERAL HOSPITAL, Edgware, Middlesex. RESIDENT OBSTETRIC HOUSE SURGEON for above Hospital. 6 months' appointment. Post vacant 4th March, 1958. Recognised for M.R.C.O.G. and pre-registration purposes.

Applications, stating age, qualifications, experience, and enclosing copies of up to 3 recent testimonials, to Medical Director of Hospital by 14th February, 1958.

EDGWARE GENERAL HOSPITAL, Edgware, Middlesex. (715 Beds.) RESIDENT SENIOR CASUALTY HOUSE OFFICER required at above Hospital. Post vacant 15th February, 1958, and recognised for F.R.C.S. purposes.

Apply, stating age, nationality, qualifications and experience, together with the names and addresses of 2 referees, to Group Secretary, Edgware General Hospital, by 8th February, 1958.

EDINBURGH NORTHERN GROUP OF HOSPITALS. RESIDENT ANÆSTHETIST required for Western General Hospital commencing on 1st April. Salary scale £467 10s.–£577 10s. This post is recognised for the Diploma in Anæsthetics.

Applications, with names of 2 referees, to the Medical Superintendent, Western General Hospital, Edinburgh, 4.

EDINBURGH. ROYAL HOSPITAL FOR SICK CHILDREN. Applications are invited from registered medical practitioners and pre-registration graduates for a resident appointment as HOUSE SURGEON (E.N.T.) for 6 months commencing 1st April, 1958. National Health Service scale.

Applications, stating age, qualifications and experience, and names of 2 referees, to be sent within 14 days to the Secretary, 1, Rillbank-terrace, Edinburgh, 9.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. RESIDENT HOUSE SURGEON—third post. Vacant 30th March, 1958. Post provides experience and duties in general surgery and orthopædics. 6-month appointment. Post recognised for F.R.C.S.

Applications, with the names and addresses of 2 referees, to the Group Secretary, Enfield Group Hospital Management Committee, at Chase Farm Hospital.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. RESIDENT HOUSE SURGEON, pre-registration post. Vacant 3rd March, 1958. Duties with general surgical unit, doing some genito-urinary work. Post recognised by the Royal College of Surgeons. 6 months' appointment.

Applications, with the names and addresses of 2 referees, to the Group Secretary, Enfield Group Hospital Management Committee, Chase Farm Hospital.

GLASGOW, E.3. ROBROYSTON HOSPITAL. Junior HOSPITAL MEDICAL OFFICER required. The work carried out consists mainly of tuberculous pulmonary disease though substantial units exist for skeletal and urological tuberculosis. A small unit for acute respiratory diseases also exists, and there are units for non-tuberculous chest disease and for geriatrics. The post is non-resident and conditions of service and salary are in accordance with Whitley Council regulations.

Applications in writing should be made as soon as possible to the Physician-Superintendent.

GREENOCK. GATESIDE INFECTIOUS DISEASES HOSPITAL. BOARD OF MANAGEMENT FOR GREENOCK AND DISTRICT HOSPITALS. Applications are invited from suitably qualified medical practitioners for the appointments of RESIDENT JUNIOR HOSPITAL MEDICAL OFFICERS. Good experience offered in the diagnosis and treatment of infectious diseases including venereal diseases. Well equipped clinical laboratory. The appointments will be subject to the National Health Service (Scotland) (superannuation) regulations.

Applications, giving details of age, experience, and qualifications, together with copies of 3 recent testimonials, or names of referees, should be forwarded to the Group Secretary and Treasurer, 47, Eldon-street, Greenock, within 14 days from date of insertion.

GRIMSBY GENERAL HOSPITAL. Applications are invited for CASUALTY OFFICER (Senior House Officer grade) with some E.N.T. duties. Appointment recognised for F.R.C.S. The staffing of the department is a Senior Casualty Officer and 2 Senior House Officers. Up-to-date medical library and reading facilities available.

Applications, with names and addresses of 2 referees, to Hospital Secretary.

HALIFAX. ROYAL HALIFAX INFIRMARY. Senior HOUSE OFFICER in Anæsthetics required. Post recognised for F.F.A.R.C.S. and D.A. Salary £819 10s. p.a. less £150 p.a. for board residence, &c.

Applications to be forwarded to the Group Secretary, Royal Halifax Infirmary, Halifax.

HAREFIELD HOSPITAL REGIONAL THORACIC SURGICAL UNIT, HAREFIELD, MIDDLESEX. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post of SURGICAL REGISTRAR to the Harefield Thoracic Surgical Unit which serves the North West Metropolitan Region. In the Hospital there are 90 Beds for non-tuberculous surgical chest conditions and 360 Beds for tuberculosis. The appointment thus affords a wide experience in all aspects of thoracic surgery. Candidates must have had previous surgical experience and preference will be given to candidates with a higher surgical qualification. The appointment will be held in the first instance for 1 year.

Application forms obtainable from and returnable to the Group Secretary, Harefield and Northwood Group Hospital Management Committee, Mount Vernon Hospital, Northwood, Middlesex, by 11th February, 1958.

HASTINGS AND ST. LEONARDS-ON-SEA. BUCHANAN HOSPITAL. (91 Beds.) HOUSE SURGEON required for gynæcological beds (32) in hospital for obstetric and gynæcological patients only. Appointment recognised for M.R.C.O.G. is vacant 24th February, 1958. Candidates for pre-registration service (surgery) can be considered.

Applications, giving names and addresses of 3 referees, to be sent to the Hospital Administrator.

HASTINGS. ROYAL EAST SUSSEX HOSPITAL (150 Beds.) Applications are invited for the post of CASUALTY AND ORTHOPÆDIC HOUSE SURGEON, 1 of 2 similar posts graded Senior House Officer. Post vacant 22nd February, 1958.

Apply, with 2 testimonials or the names of 2 referees, to the Hospital Administrator.

HASTINGS. ROYAL EAST SUSSEX HOSPITAL. (150 Beds.) Applications are invited for the post of HOUSE SURGEON (surgery/E.N.T.—pre-registration), vacant on 20th February, 1958. This Hospital is the main surgical hospital in the Hastings area and the post offers excellent experience.

Apply, with 2 testimonials or the names of 2 referees, to Hospital Administrator.

HEREFORD. COUNTY HOSPITAL. (339 Beds.) House OFFICER (surgery) required immediately. Hospital recognised for F.R.C.S.

Applications, with copies of 2 recent testimonials, to Medical Superintendent, County Hospital.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) Applications are invited for the appointment of HOUSE SURGEON (general surgery, gynæcology and obstetrics). First or second post. To commence as soon as possible. Pre-registration post; recognised under F.R.C.S. regulations.

Applications to Group Secretary, Hertford Hospital Management Committee, County Hospital, Hertford, Herts.

HILLINGDON HOSPITAL, Uxbridge, Middlesex. (621 Beds.) HOUSE SURGEON for Ophthalmic and E.N.T. Departments. Duties include inpatient and outpatient work and operative experience in both specialties.

Apply, stating age, qualifications, nationality and experience, together with copies of not more than 3 recent testimonials, to Medical Director by 10th February.

HOUNSLOW HOSPITAL, Staines-road, Hounslow, Middlesex. (81 Beds. General acute.) NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. RESIDENT SURGICAL REGISTRAR required for 1 year in the first instance, recognised for F.R.C.S. Post vacant early March. Candidates may visit the Hospital by direct appointment with the Hospital Secretary.

Application forms obtainable from, and returnable to, the Secretary, Staines Group Hospital Management Committee, Ashford Hospital, London-road, Ashford, Middlesex, not later than 11th February, 1958.

HUDDERSFIELD ROYAL INFIRMARY. (285 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from provisionally registered medical practitioners for the post of HOUSE PHYSICIAN, to commence duties on 1st March, 1958. Salary in accordance with national scales.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON,
Secretary to the Management Committee.

The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (285 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON required to commence duty immediately. The post is recognised as a pre-registration appointment and for the F.R.C.S. Salary in accordance with national scale.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON,
Secretary to the Management Committee.

The Royal Infirmary, Huddersfield.

HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER in the E.N.T. Department of the Victoria Hospital for Sick Children and the Hull Royal Infirmary. The post, which is now vacant, is recognised for the F.R.C.S. and D.L.O.

Applications, with testimonials, should be sent to the Hospital Secretary, Victoria Hospital for Sick Children, Park-street, Hull.

HULL. KINGSTON GENERAL HOSPITAL. (419 Beds.) HULL A GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE PHYSICIAN. There are 2 Junior House Physicians. Resident post.

Applications, with full particulars, to the Hospital Secretary.

HULL. VICTORIA HOSPITAL FOR SICK CHILDREN, Park-street. HOUSE SURGEON required immediately. Recognised for D.C.H. An interesting and varied post which includes outpatient and casualty work.

Applications, together with details of experience, testimonials, &c., to the Hospital Secretary.

ILKLEY. MIDDLETON HOSPITAL. (430 Beds.) Resident SENIOR HOUSE OFFICER (surgical) required for Major Thoracic Surgical Unit at the above Hospital.

Applications, stating age, nationality, qualifications and experience, to Hospital Secretary.

IPSWICH AND EAST SUFFOLK HOSPITAL (Anglesea-ROAD WING). (356 Beds.) Applications are invited for 2 posts of HOUSE SURGEON to Consultant General Surgeons. The posts are recognised for pre-registration and for the F.R.C.S. examinations.

Applications, with copies of recent testimonials, to Hospital Secretary.

IPSWICH AND EAST SUFFOLK HOSPITAL, Anglesea-ROAD WING. (356 Beds.) Applications are invited for the post of HOUSE SURGEON to the E.N.T. and Ophthalmic Departments. The post is recognised for pre-registration and for the D.L.O. examination.

Applications, giving full particulars and copies of recent testimonials, to Hospital Secretary.

IPSWICH AND EAST SUFFOLK HOSPITAL, Anglesea-ROAD WING. (356 Beds.) Applications are invited for the post of HOUSE SURGEON to the Fracture and Orthopædic Department. Approved pre-registration post.

Applications, with copies of recent testimonials, to the Hospital Secretary.

KETTERING AND DISTRICT GENERAL HOSPITAL, NORTHAMPTONSHIRE. Applications are invited for the post of HOUSE SURGEON (pre-registration), vacant 1st February, 1958. Post recognised for F.R.C.S.

Applications, stating age, experience, and qualifications, together with copies of 3 recent testimonials, to be sent to the Group Secretary at the above address.

KETTERING AND DISTRICT GENERAL HOSPITAL. CASUALTY OFFICER (Senior House Officer). Recognised for F.R.C.S. The post, vacant now, offers wide experience of all traumatic conditions including fractures and some orthopædic cases with charge of 30 Beds.

Applications, accompanied by testimonials, to be sent to the Group Secretary, General Hospital, Kettering.

KETTERING GENERAL HOSPITAL, Kettering. Applications are invited from registered medical practitioners for the appointment of SENIOR HOUSE OFFICER in Paediatrics, vacant 1st March, 1958. Post recognised for D.C.H.

Applications, together with copies of 3 recent testimonials, should be sent to the Group Secretary, as soon as possible.

KINGSTON HOSPITAL, Wolverton-avenue, Kingston UPON THAMES. KINGSTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from suitably qualified medical officers for the post of SENIOR HOUSE OFFICER (gynæcology) which is available on 1st April, 1958. The post is recognised for M.R.C.O.G. purposes.

Applications, stating age, qualifications and experience, with 2 recent testimonials, should reach the Physician-Superintendent of the Hospital within 7 days of the appearance of this advertisement.

KINGSTON HOSPITAL, Wolverton-avenue, Kingston UPON THAMES. KINGSTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from suitably qualified medical officers for the post of SENIOR HOUSE OFFICER (orthopædic and casualty) which is available on 1st March, 1958 and a similar post will be available at the end of March. The post is recognised in casualty for F.R.C.S. purposes.

Applications, stating age, qualifications and experience, with 2 recent testimonials, should reach the Physician-Superintendent of the Hospital within 7 days of the appearance of this advertisement.

KIRKCALDY. VICTORIA HOSPITAL. 3 Pre-registration HOUSE OFFICER posts will become vacant as at 1st April, 1958, 2 in the Acute Medical Unit (65 Beds) under the charge of a Consultant Physician, and 1 part-time in the Acute Medical Unit and part-time in the Acute Geriatric Unit (48 Beds).

Apply, giving names of 2 referees, to the Medical Superintendent, East Fife Hospitals Board of Management, 243A, High-street, Kirkcaldy.

KIRKCALDY GENERAL HOSPITAL. House Officers required to commence duty at 1st April, 1958. The Hospital has 74 general surgical and orthopædic beds and a busy Casualty and Outpatient Department. The posts qualify for pre-registration. Salary in accordance with national scales.

Apply, with copies of 2 recent testimonials, to the Medical Superintendent, East Fife Hospitals Board of Management, 243A, High-street, Kirkcaldy.

LANCASTER. ROYAL LANCASTER INFIRMARY. (240 Beds.) RESIDENT HOUSE OFFICER (surgical) (pre-registration post). Successful applicant will work with Consultant Surgical Unit and attend Consultative Clinics. Post tenable for 6 months. Recognised for F.R.C.S.

Applications, with names of 2 referees, to the Secretary, Royal Lancaster Infirmary, Lancaster.

LEICESTER ISOLATION HOSPITAL AND CHEST UNIT, Groby-road, LEICESTER. (328 Beds.) Applications are invited for the appointment of RESIDENT SENIOR HOUSE OFFICER (surgical). Salary £819 10s. p.a. less £150 residential emoluments. The appointment is tenable for 6 months, and may be extended for a further period of 6 months. Experience will be gained in all branches of thoracic surgery, including cardiac surgery. The post is recognised for the Final Fellowship.

Applications, giving qualifications, dates, &c., and copies of 2 recent testimonials, to be forwarded as soon as possible to the Department of Thoracic Surgery at the above Hospital.

LEEDS REGIONAL HOSPITAL BOARD. Registrar vacancies.

General/Orthopædic Surgery

Halifax Group. 1 of 3 similar posts. Duties divided between general and orthopædic surgery (180 general surgical and 81 orthopædic surgery beds). May include some duties in the Casualty Department. Preferably resident.

General Surgery

Hull A Group. Mainly at Western and Kingston General Hospitals (150 general surgical beds). Resident or non-resident. Recognised for F.R.C.S. May include additional duties in the Casualty Department.

Applications, stating age, qualifications and details of present and previous appointments with dates, together with the names and addresses of 3 referees to the Secretary, the Joint Registrars Committee, Park-parade, Harrogate, by 12th February, 1958.

LEEDS REGIONAL HOSPITAL BOARD. Short-term LOCUM TENENS appointments in the Registrar grade are constantly available at hospitals in the area of the Board, particularly in the specialties of anæsthetics, general medicine, general and orthopædic surgery, and psychiatry.

Interested practitioners, suitably experienced, should communicate with the Secretary, Joint Registrars Committee, Park-parade, Harrogate.

LEEDS REGIONAL HOSPITAL BOARD. Registrar in Anæsthetics, Huddersfield Group (approximately 225 Beds in the surgical specialties). Non-resident.

Applications, stating age, qualifications and details of present and previous appointments with dates, together with the names and addresses of 3 referees, to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, by 12th February, 1958.

LEEDS. UNITED LEEDS HOSPITALS / LEEDS REGIONAL HOSPITAL BOARD. REGISTRAR in Neurology for duties divided between the Department of Neurology at The General Infirmary at Leeds (20 Beds) and Pinderfields General Hospital, Wakefield (38 Beds).

Applications, stating age, qualifications and details of present and previous appointments with dates, together with the names and addresses of 3 referees, to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, by 12th February, 1958.

LEIGH INFIRMARY, Leigh. House Surgeon, pre-registration post.

Applications, with names of 2 referees, to Secretary, Wigan and Leigh Hospital Management Committee, Knowsley House, Wigan.

LICHFIELD (near). ST. MATTHEW'S HOSPITAL, BURNTWOOD, LICHFIELD, STAFFORDSHIRE. (1530 mental beds.) BURTON-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. JUNIOR HOSPITAL MEDICAL OFFICER (psychiatry) required. Resident accommodation available. Facilities for taking a D.P.M. course at Birmingham University.

Applications, with 2 references, to the Medical Superintendent.

LINCOLN COUNTY HOSPITAL, Sewell-road, Lincoln. (200 Beds.) Applications are invited for the appointment of RESIDENT HOUSE SURGEON (Male or Female). This is an approved pre-registration post which becomes vacant in February, 1958. The duties are with a general surgeon. This post will be followed, if satisfactory, by appointment for a further 6 months as House Physician.

Applications, with copy testimonials, should be sent to the Group Secretary, Lincoln County Hospital, as soon as possible.

LINCOLN COUNTY HOSPITAL. (200 Beds—Recognised training hospital for F.R.C.S.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time RESIDENT SURGICAL REGISTRAR required. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 10th February, 1958, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

LOUTH, LINCOLNSHIRE. COUNTY HOSPITAL. (215 Beds.) GRIMSBY HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (surgical), vacant 1st March, 1958, at this General Hospital.

Applications, giving full details, together with the names of 2 referees, should be addressed to the Hospital Secretary.

LOUTH, LINCOLNSHIRE. COUNTY HOSPITAL. (215 Beds.) GRIMSBY HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the pre-registration post of HOUSE OFFICER (surgical) which falls vacant 1st March next.

Applications, giving full details, together with the names of 2 referees, should be addressed to the Hospital Secretary.

LUTON AND DUNSTABLE HOSPITAL, Luton, Bedfordshire. HOUSE SURGEON, post now vacant. Tenable for 6 months. Recognised as pre-registration post and for F.R.C.S.

Applications stating age, nationality, qualifications and experience, together with copies of two recent testimonials, to the Secretary of the Hospital.

MAIDSTONE. KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL. (113 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE SURGEON in the E.N.T. Department of the above Hospital. Post vacant end of January, 1958. There are 55 E.N.T. beds and 6 specialist operating sessions each week. Valuable experience is available, and the post is recognised for the purpose of the F.R.C.S. and the D.L.O. Salary will be £819 10s. a year, less £150 a year for residential emoluments.

Applications to the Administrative Officer, Kent County Ophthalmic and Aural Hospital, Maidstone, Kent.

MAIDSTONE. WEST KENT GENERAL HOSPITAL. (141 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the pre-registration post of HOUSE SURGEON. 6 months' appointment. Post vacant mid-January, 1958. Salary at the rate of £467 10s.–£577 10s. A deduction at the rate of £125 a year is made for board and lodging, and other services provided.

Applications should be forwarded, as soon as possible, to the Administrative Officer at the Hospital.

MAIDSTONE. WEST KENT GENERAL HOSPITAL. (141 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE. CASUALTY OFFICER (Senior House Officer). Recognised for F.R.C.S. Salary £819 10s. p.a. less £150 p.a. for board and lodging. Post vacant February, 1958.

Applications to the Administrative Officer at the Hospital.

MACCLESFIELD HOSPITAL. (300 Beds.) Senior House OFFICER in Pathology (post vacant 1st March, 1958); no previous experience in the subject required. Post recognised for D.Path.; experience in all branches of the subject offered.

Apply, with names and addresses of 2 referees, to Group Secretary, Macclesfield and District Hospital Management Committee, Willerby House, Cumberland-street, Macclesfield.

MAIDENHEAD HOSPITAL, Berkshire. Applications invited for post of SENIOR HOUSE OFFICER (medical) for Maidenhead General Hospital with duties at St. Mark's and Isolation Hospitals, Maidenhead. Appointment for 1 year, commencing 1st February.

Applications, stating age, qualifications, experience and nationality, and 3 testimonials or names of 3 referees, to Secretary.

MANCHESTER. ANCOATS HOSPITAL. Applications are invited for the post of REGISTRAR in Medicine (Resident Medical Officer). Vacant 16th February, 1958.

Applications, with names of 2 referees, by 10th February, 1958, to Group Secretary, North Manchester Hospital Management Committee, Crumpsall Hospital, Manchester, 8.

MANCHESTER. ANCOATS HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER in Medicine. Recognised for M.R.C.P. Vacant 10th March, 1958.

Applications, with names of 2 referees, by 10th February, 1958, to Group Secretary, North Manchester Hospital Management Committee, Crumpsall Hospital, Manchester, 8.

MANCHESTER. BOOTH HALL CHILDREN'S HOSPITAL, BLACKLEY, MANCHESTER, 9. (380 Beds.) JUNIOR HOSPITAL MEDICAL OFFICER (resident) required for Plastic Unit and Regional Burns Unit (45 Beds for severe burns and scalds). Post vacant 1st April. £170 deducted for full emoluments.

Applications, giving names and addresses of 2 referees, to be sent to Group Secretary, from whom further particulars may be obtained.

MANCHESTER. BOOTH HALL CHILDREN'S HOSPITAL, BLACKLEY, MANCHESTER, 9. Locum RESIDENT SURGICAL OFFICER (Registrar) required for 3 months from 24th February.

Applications to, and further particulars from, Group Secretary.

MANCHESTER, 20. CHRISTIE HOSPITAL AND HOLT RADIUM INSTITUTE. SOUTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of RESIDENT SENIOR HOUSE OFFICER (radiotherapy) at the above Hospital. Suitable applicants will be eligible for the D.M.R.T. course commencing in April, 1958.

Applications, with full details and the names of 2 referees, to the Group Secretary, Withington Hospital, Manchester, 20, immediately.

MANCHESTER. SPRINGFIELD HOSPITAL, Crumpsall, MANCHESTER, 8. SPRINGFIELD AND SWINTON HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of JUNIOR HOSPITAL MEDICAL OFFICER at this Mental Hospital of over 750 Beds. Period of tenure, 4 years in the first instance. Modern methods of investigation and treatment are carried out. Facilities will be granted for attendance at the course for D.P.M. of the University of Manchester (with the Department of Psychiatry of which this Hospital is associated). Preference given to candidates who have previous general hospital and/or psychiatric experience. Accommodation is available for a single person. Terms and conditions of the National Health Service apply. Further particulars can be obtained from, and the Hospital may be visited by arrangement with, the Medical Superintendent.

Applications giving details of age, experience, &c., and the names of 3 referees, to the Medical Superintendent as soon as possible.

MANCHESTER REGIONAL HOSPITAL BOARD. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of REGISTRAR in Radiotherapy at the Christie Hospital and Holt Radium Institute, Manchester. Candidates must hold either the Diploma in Radiotherapy or an F.R.C.S. or M.R.C.P.

Applications, with full details, to be forwarded to the Group Secretary, Withington Hospital, Manchester, immediately.

MANCHESTER REGIONAL HOSPITAL BOARD. Resident SURGICAL REGISTRAR required mid-March, 1958, for the Royal Infirmary, Blackburn, a busy acute hospital of 262 Beds. Post recognised for F.R.C.S.

Application forms obtainable from Group Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

MANCHESTER REGIONAL HOSPITAL BOARD. Non-RESIDENT SENIOR REGISTRAR in Psychiatry to the Psychiatric Unit at Crumpsall Hospital, Manchester, 8. Duties include attendance at Consultant psychiatric clinics and participation in treatment of inpatients and outpatients. Facilities for gaining experience in child psychiatry will be afforded at the nearby regional centre. The person appointed may later be required to rotate to other hospitals in the area to gain wider experience.

Application forms from the Senior Administrative Medical Officer of the Board, Cheetwood-road, Manchester, 8, to be returned by 19th February, 1958.

MANCHESTER REGIONAL HOSPITAL BOARD. SURGICAL REGISTRAR (resident) required at Birch Hill Hospital, Rochdale. Accommodation for married man available if required. Post recognised for 6 months' F.R.C.S. experience and tenable for 1 year in first instance.

Apply at once to Group Secretary, Central Offices, Birch Hill Hospital, Rochdale, Lancs, giving usual details.

MANCHESTER REGIONAL HOSPITAL BOARD. REGISTRAR in Psychiatry required at Prestwich Hospital (3042 Beds); residential accommodation available for single person. All modern treatments practised and study facilities granted.

Applications, giving full details with the names and addresses of at least 2 referees, should be sent to the Medical Superintendent, Prestwich Hospital, P.O. Box No. 1, Prestwich, near Manchester, not later than Saturday, 8th February, 1958.

MANCHESTER REGIONAL HOSPITAL BOARD AND THE UNITED MANCHESTER HOSPITALS. SENIOR REGISTRAR in Orthopædic Surgery, tenable initially in the North Manchester and Booth Hall and Monsall Groups of hospitals, mainly at Crumpsall, Ancoats and Booth Hall (Children's) Hospitals. The post is included in the regional rotation scheme and it is expected that the successful candidate will later transfer to the Manchester Royal Infirmary to continue training.

Application forms from the Senior Administrative Medical Officer to the Board, Cheetwood-road, Manchester, 8, to be returned by 17th February, 1958.

MANCHESTER. UNITED MANCHESTER HOSPITALS. SAINT MARY'S HOSPITALS, MANCHESTER. Applications invited for post of SENIOR HOUSE OFFICER in Obstetrics for 12 months from 1st April, 1958. Previous hospital experience in general medicine and surgery, and in obstetrics necessary. Recognised for M.R.C.O.G. examination. Duties involve clinical responsibility for mothers and babies and supervision of work of pre-registration House Officers. National scales.

Application forms from the undersigned, to be returned by 10th February, 1958. A. R. WISE,
General Superintendent.

Saint Mary's Hospitals, Whitworth Park, Manchester, 13.

MANCHESTER. UNITED MANCHESTER HOSPITALS. SAINT MARY'S HOSPITALS, MANCHESTER. Applications invited for 3 posts of SENIOR HOUSE OFFICER in Gynæcology for 6 months from 1st April, 1958. Previous hospital experience in medicine and surgery necessary. Recognised for M.R.C.O.G. examination. National scales.

Application forms from the undersigned, to be returned by 10th February, 1958. A. R. WISE, General Superintendent.

Saint Mary's Hospitals, Whitworth Park, Manchester, 13.

MANCHESTER. UNITED MANCHESTER HOSPITALS. MANCHESTER ROYAL INFIRMARY, MANCHESTER, 13. SENIOR HOUSE OFFICER to the Department of Anæsthetics, to commence on 1st June, 1958. Whole-time, resident appointment for 6 months, renewable for a second and possibly a third 6 months.

Application form obtainable from the Secretary, to be returned by 22nd February, 1958.

MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL. (Non-sectarian, 104 Beds.) Applications are invited for the resident post of SENIOR HOUSE OFFICER in Medicine. Vacant 19th March, 1958.

Applications, with names of 2 referees, by 10th February, 1958, to Group Secretary, North Manchester Hospital Management Committee, Crumpsall Hospital, Manchester, 8.

MIDDLESBROUGH GENERAL HOSPITAL. Ayresome Green-lane, MIDDLESBROUGH. TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE OFFICER (orthopædics). The post, which will be vacant about 12th February, is recognised for the F.R.C.S. examination and will include some duties in the Casualty Department, which is under the supervision of a full-time Senior Casualty Officer.

Applications, stating age, qualifications and experience, together with the names of 2 referees, should be sent, as soon as possible, to the Hospital Secretary.

MIDDLESBROUGH (near). HEMLINGTON HOSPITAL. TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER required for Neurosurgical Department of 24 Beds. Post offers wide experience in neurology. No previous experience necessary.

Applications, with names of 2 referees, to be sent to the Hospital Secretary.

NEWCASTLE REGIONAL HOSPITAL BOARD. Registrar OBSTETRICIAN AND GYNÆCOLOGIST, whole-time, Tees-side Group of hospitals. Main hospital, Middlesbrough Maternity (80 Beds). Post affords good obstetrical and gynæcological experience. Single accommodation available.

Applications, with names and addresses of 3 referees, to Senior Administrative Medical Officer, Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 14 days.

NEWCASTLE REGIONAL HOSPITAL BOARD. Registrar PSYCHIATRIST, whole-time, St. Mary's Hospital, Stannington, Morpeth (850 Beds). Single accommodation available. Married person may live out by arrangement, if near hospital and prepared to sleep in when on duty. This appointment offers good experience and training in psychiatry. Facilities are available for the appointee to take the Durham University D.P.M. course. Further particulars from Regional Psychiatrist.

Applications, with names and addresses of 3 referees, to Regional Psychiatrist, Newcastle Regional Hospital Board, Benfield-road, Newcastle upon Tyne, 6, within 14 days.

NOTTINGHAM CITY HOSPITAL. (611 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER (medical). The appointment will be for 1 year.

Applications, stating age, nationality, qualifications and experience, together with copies of not more than 3 testimonials, to be sent immediately to the Hospital Secretary, City Hospital, Hucknall-road, Nottingham, from whom particulars may be obtained.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER (casualty), duties to commence about 14th February. Establishment 3. Recognised for F.R.C.S. Post offers wide experience of casualty work.

Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Secretary, General Hospital, Nottingham.

NOTTINGHAM CHILDREN'S HOSPITAL. (136 Beds. Recognised for the D.C.H.) Applications are invited for the following posts:—

SENIOR HOUSE OFFICER (medical), vacant 6th March, 1958.

SENIOR HOUSE OFFICER (surgical), vacant 15th March, 1958.

The posts are tenable for 6 months or a year by agreement.

Applications, with copies of 2 testimonials, should be sent to the Secretary, Nottingham Children's Hospital, Chestnut-grove, Nottingham.

NANTWICH. BARONY HOSPITAL. Junior Hospital MEDICAL OFFICER (resident or non-resident), temporary or permanent, required for duties in Department of Psychiatry (93 Beds) which is a very active unit, including outpatient clinics and outpatient treatment centre. Personal supervision and teaching by Consultant Psychiatrist. Good experience available in all methods of treatment. Quarters for a single person are available at the Hospital.

Applications, stating age, qualifications, &c., with names of 2 referees, to be sent to the Group Secretary, South Cheshire Hospital Management Committee, Barony Hospital, Nantwich, Cheshire.

NEWBURY DISTRICT HOSPITAL, Newbury, Berkshire. (90 Beds.) READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the appointment of RESIDENT SENIOR HOUSE OFFICER (general surgery); married quarters available.

Write, stating age, qualifications with dates, nationality and present post, together with the names of 3 referees, to Group Secretary, Reading and District Hospital Management Committee, 3, Craven-road, Reading.

OXFORD. LITTLEMORE (MENTAL) HOSPITAL AND ASHHURST CLINIC. Applications are invited for the post of SENIOR HOUSE OFFICER. Previous experience as House Surgeon or Physician essential. Previous psychiatric experience unnecessary. The Physician appointed will work primarily in the insulin therapy clinic and with a Senior Consultant at outpatient clinics. There are ample facilities for postgraduate study in a teaching general hospital. Salary £819 10s. p.a.

Apply Physician-Superintendent, Littlemore Hospital, near Oxford.

OXFORD. NUFFIELD ORTHOPÆDIC CENTRE, Headington, OXFORD. Applications are invited from suitably qualified persons for a SENIOR HOUSE OFFICER grade appointment from 1st March, 1958.

Applications, with names of referees, to the Secretary as soon as possible.

OXFORD. UNITED OXFORD HOSPITALS. Applications invited for the post of HOUSE OFFICER in the Oxford Eye Hospital, with effect from 1st April, 1958.

Applications, stating age, qualifications and experience, together with names of 2 referees, to the Administrator, Radcliffe Infirmary, Oxford, by 15th February, 1958.

PETERBOROUGH. MEMORIAL HOSPITAL. Senior HOUSE OFFICER (pædiatrics) required to commence 1st March, 1958. Charge of medical and surgical beds. Good general experience in pædiatrics and infectious diseases.

Applications, stating full particulars and names of 2 referees, to be sent as soon as possible to the Secretary, Memorial Hospital, Peterborough.

PLYMOUTH. SCOTT ISOLATION HOSPITAL. House PHYSICIAN (resident, Male), post vacant 7th February, 1958. Recognised pre-registration post which offers excellent experience.

Applications should be sent to the Group Secretary, Plymouth Special Hospital Management Committee, 8, Nelson-gardens, Stoke, Plymouth, Devon.

POOLE GENERAL HOSPITAL, Poole, Dorset. (320 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT MEDICAL REGISTRAR. The post, which is tenable for 1 year in the first instance, is now vacant.

Forms of application are obtainable from the Group Secretary Hospital Management Committee Office, Royal Victoria Hospital, Gloucester-road, Boscombe, Bournemouth, and should be returned to him within 14 days of the appearance of this advertisement.

POOLE GENERAL HOSPITAL, Poole, Dorset. (320 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. CASUALTY OFFICER (Senior House Officer) required 15th February, 1958. Resident or non-resident. Post suitable for persons reading for higher diplomas.

Applications to Hospital Secretary.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE.

(1) **Saint Mary's Hospital**
HOUSE SURGEON (pre-registration). Vacant now and 11th February, 1958.

(2) **Royal Portsmouth Hospital**
HOUSE SURGEON (pre-registration). Vacant 14th March, 1958.

(3) **Queen Alexandra Hospital**
HOUSE SURGEON (pre-registration). Vacant 12th February, 1958.

Applications, stating age, experience and qualifications, together with the names of 2 referees, should be forwarded as soon as possible to E. H. HURST.

St. Mary's Hospital, Milton-road, Portsmouth.

ROCHESTER, KENT. ST. BARTHOLOMEW'S HOSPITAL. (Recognised for the F.R.C.S.) MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. RESIDENT SURGICAL OFFICER (general surgery) required for post vacant 1st March, 1958. The appointment, graded as Senior House Officer, will be for 6 months in first instance, renewable for a maximum period of 2 years. Salary £819 10s. less £150 p.a. for residential emoluments.

Applications, giving full particulars and names of 3 referees, to the Hospital Secretary.

ROCHESTER, KENT. ST. BARTHOLOMEW'S HOSPITAL, MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of CASUALTY OFFICER (Senior House Officer grade) (1 of 2 in the department) which offers excellent experience with fractures and emergency surgery and presents facilities for study. Recognised for F.R.C.S. Post vacant now and tenable for 6 months or 1 year. Salary £819 10s. p.a.

Applications, stating age, nationality, qualifications and experience, with recent testimonials, to Hospital Secretary.

READING AREA DEPARTMENT OF MEDICINE. READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered and provisionally registered medical practitioners for 2 posts as RESIDENT HOUSE PHYSICIAN, vacant 1st March, 1958, for a period of 6 months. Successful candidates will be required to carry out duties at the following Reading hospitals: Royal Berkshire Hospital (397 Beds), Battle (374 Beds), and Prospect Park (104 Beds).

Write immediately, stating age, qualifications with dates, nationality, present post, with copies of 2 recent testimonials, to Secretary, Royal Berkshire Hospital, Reading.

READING. BATTLE HOSPITAL. (391 Beds.) READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of RESIDENT JUNIOR HOUSE SURGEON in the Accident and Orthopædic Department. F.R.C.S. recognised. Also casualty duties.

Apply, stating age, qualifications with dates, nationality, present post, with copy of recent testimonial, to Secretary.

READING COMBINED HOSPITALS. Area Department OF OBSTETRICS AND GYNÆCOLOGY. (100 Beds.) Applications are invited from registered medical practitioners for the resident post of HOUSE SURGEON to the above Department. The appointment, which is vacant on 19th February, 1958, is for 1 year, with 6 months' gynæcology at the Royal Berkshire Hospital, and 6 months in the maternity unit at Battle Hospital. Both appointments are recognised for the Diplomas of the Royal College of Obstetricians and Gynæcologists.

Write, stating age and qualifications with dates, nationality and present appointment, with copy of 1 recent testimonial, to Secretary, Royal Berkshire Hospital, Reading.

READING. ROYAL BERKSHIRE HOSPITAL. (397 Beds.) READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered and provisionally registered medical practitioners for the resident post of HOUSE PHYSICIAN in the Pædiatric Department, vacant 1st March, 1958, and tenable for 6 months.

Write, stating age, qualifications with dates, nationality, present post, with copies of 2 recent testimonials, to Secretary.

READING. ROYAL BERKSHIRE HOSPITAL. (397 Beds.) READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered and provisionally registered medical practitioners for the resident post of HOUSE SURGEON, vacant 1st March, 1958, and tenable for 6 months.

Write, stating age, qualifications with dates, nationality, present post, with copies of 2 recent testimonials, to Secretary.

RHYL. ROYAL ALEXANDRA HOSPITAL. (138 Beds.) Applications are invited for the appointment of a CASUALTY OFFICER (Senior House Officer grade) at the above Hospital. Post recognised for F.R.C.S. Successful applicant will be required to commence duties 1st March, 1958.

Applications, stating age, qualifications, experience and nationality, accompanied by copies of 2 recent testimonials, should be sent to the Group Secretary, Clwyd and Deeside Hospital Management Committee, "Rhianfa," Russell-road, Rhyl.

ROCHFORD, ESSEX. GENERAL HOSPITAL. (620 Beds.) HOUSE PHYSICIAN (pre-registration) required, to commence duties on 1st March, 1958.

Applications, &c. (1 testimonial only necessary from pre-registration applicants seeking first appointment), to be sent to the Secretary at the above Hospital, by 10th February, 1958.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) RESIDENT HOUSE SURGEON required immediately. Open to either pre-registration applicants or to fully registered practitioners.

Apply immediately to Group Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital.

SALISBURY GENERAL HOSPITAL. Applications are invited for the appointment of RESIDENT HOUSE SURGEON/HOUSE PHYSICIAN to run consecutively in this order for a period of 6 months in each post. The post is open to pre-registration candidates.

Apply, naming 2 referees, to Group Secretary, Salisbury Group Hospital Management Committee, Odstock Hospital, Salisbury.

SCOTLAND. EASTERN REGIONAL HOSPITAL BOARD. General Medicine. STRACATHRO HOSPITAL, BRECHIN. Applications are invited for the post of REGISTRAR in Medicine at Stracathro Hospital, Brechin (a general hospital of 676 Beds—150 medical). Salary and conditions of service in accordance with national agreement.

Further particulars and forms of application from the Secretary to the Board, 430, Blackness-road, Dundee, with whom applications must be lodged not later than 14th February, 1958.

SCOTLAND. SOUTH-EASTERN REGIONAL HOSPITAL BOARD. REGISTRAR to the Respiratory Diseases Unit for the period of 1 year in the first instance. Duties will be in the first place with the Professorial Unit of the Department of Tuberculosis and Diseases of the Respiratory System, University of Edinburgh, working in the Royal Victoria Hospital and Associated Hospitals Group. The post will involve work with both tuberculosis and non-tuberculous diseases of the chest and the holder will be expected to assist with teaching and research.

Apply, giving particulars of age, qualifications and previous experience, and the names of 2 referees, to the Secretary, 11, Drumsheugh-gardens, Edinburgh, 3, by 22nd February, 1958.

SCOTLAND. SOUTH-EASTERN REGIONAL HOSPITAL BOARD. REGISTRAR in Medicine at the Royal Infirmary of Edinburgh, for duties in the cardiological unit, vacant on 1st June, 1958.

Apply, giving particulars of age, qualifications and previous experience, and the names of 2 referees, to the Secretary, 11, Drumsheugh-gardens, Edinburgh, 3, by 22nd February, 1958.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited for the following appointments, which will be for 1 year in the first instance :—

SENIOR REGISTRAR in Radiotherapy based at the Western Infirmary, Glasgow.
SENIOR REGISTRAR in Ophthalmology based at the Glasgow Eye Infirmary.
SENIOR REGISTRAR in Ophthalmology based at the Glasgow Ophthalmic Institution.
SENIOR REGISTRAR in Psychiatry based at Stobhill General Hospital, Glasgow.
REGISTRAR in Psychiatry based at Riccartsbar Mental Hospital, Paisley, Renfrewshire.
REGISTRAR in Pathology based at Stobhill General Hospital, Glasgow.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of 3 referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, C.2, by 15th February, 1958.

SHEFFIELD, 5. CITY GENERAL HOSPITAL. Applications are invited for the resident (pre-registration) post of HOUSE SURGEON in Orthopædics.

Applications, giving full details of age, nationality, qualifications, present and previous appointments with dates, and the names of 2 persons to whom reference may be made, should be forwarded to the Group Secretary, Sheffield No. 1 Hospital Management Committee, Nether Edge Hospital, Sheffield, 11.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. BOARD OF GOVERNORS and SHEFFIELD REGIONAL HOSPITAL BOARD. Reciprocal training scheme for Senior Registrars. Whole-time SENIOR REGISTRAR in General Medicine required. Initial tenure at Derbyshire Royal Infirmary (416 Beds). Possession of a higher qualification is desirable. Appointment for 1 year in first instance and renewable thereafter annually. Successful candidate will be transferred to the teaching hospitals for the second phase of the appointment in accordance with arrangements under the reciprocal training scheme. Renewal of appointment and transfer to the teaching hospitals will be subject to satisfactory work and progress.

Further details and form of application from the Senior Administrative Medical Officer, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield. Forms to be returned by 17th February, 1958.

SHEFFIELD. WHARNCLIFFE HOSPITAL. (129 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. Whole-time SURGICAL REGISTRAR with additional orthopædic duties required immediately. Single accommodation available. Appointment for 1 year in first instance.

Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood-road, Sheffield, by 10th February, 1958, giving age, nationality, qualifications, present and previous appointments with dates, naming 3 referees.

SHOREHAM-BY-SEA, SUSSEX. SOUTHLANDS HOSPITAL. Locum REGISTRAR (obstetrics and gynæcology) required from 14th to 31st March, 1958, inclusive.

Apply Hospital Secretary, Southlands Hospital, as soon as possible. A. V. OAKTON, Group Secretary,
Worthing Group Hospital Management Committee.

SHOTTS, LANARKSHIRE. HARTWOOD MENTAL HOSPITAL. Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER at the above Hospital of 1910 Beds. The appointment is subject to the National Health Service salary scale and conditions.

Applications, with full details, should be sent to the Physician-Superintendent.

SHREWSBURY. SHELTON MENTAL HOSPITAL. (1000 Beds.) SHREWSBURY HOSPITAL GROUP. JUNIOR HOSPITAL MEDICAL OFFICER. Appointment for 1 year in first instance. Single residential accommodation available. Recognised for D.P.M. Associated outpatient clinics.

Applications to Medical Superintendent.

SIDCUP, KENT. QUEEN MARY'S HOSPITAL. Senior HOUSE OFFICER (gynæcology and general surgery) required from 1st March, 1958. The duration of the post is for 1 year in the first instance.

Applications, stating age, qualifications and experience, together with names and addresses of 2 referees, should be sent to the Secretary.

SIDCUP, KENT. QUEEN MARY'S HOSPITAL. Senior HOUSE OFFICER (casualty and orthopædic) required early February, 1958. The successful applicant will serve 3 months in the Orthopædic Department and 3 months as Casualty Officer. The post is recognised under the Fellowship Regulations as one giving the required period of 6 months' casualty training.

Applications, stating age, qualifications and experience, together with names and addresses of 2 referees, should be sent to the Secretary.

SOUTHAMPTON CHEST HOSPITAL. (252 Beds.) SENIOR HOUSE OFFICER required, to be responsible for Infectious Diseases Unit. The duties are such as to suit a candidate reading for higher examinations. The Unit is sited at a Hospital possessing up-to-date tuberculosis and thoracic surgical units, whilst the Southampton Group of hospitals as a whole affords excellent opportunities for study and experience in all branches of medicine.

Applications, together with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL (274 Beds) and SOUTHAMPTON GENERAL HOSPITAL (471 Beds). SENIOR HOUSE OFFICER (E.N.T.) required in February. This post is recognised for the F.R.C.S. (Eng.) and D.L.O. examinations and provides experience in all branches of E.N.T. work. The Group includes a diagnostic and distributing hearing-aid centre.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (274 Beds.) RESIDENT HOUSE SURGEON required. Pre-registration candidates eligible.

Applications, with copies of recent testimonials, should be forwarded to Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (274 Beds. Recognised for F.R.C.S.) ORTHOPÆDIC HOUSE SURGEON (post recognised for pre-registration service and tenable for 6 months). The Hospital is the centre to which all trauma from a large industrial town and port is directed, thus providing excellent experience in the treatment of traumatic conditions; patients with orthopædic conditions are drawn from a wide area.

Applications, with copies of testimonials, should be sent as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post of ORTHOPÆDIC REGISTRAR to a team of 3 Orthopædic Surgeons at the above Hospital. This Hospital is the centre to which all trauma cases from a large industrial town and port are directed, thus providing excellent experience in the treatment of traumatic conditions; patients with orthopædic conditions are also drawn from a wide area. The successful candidate will be required to perform clinical duties at peripheral hospitals. The post, which becomes vacant in March, is recognised for the Fellowship.

Forms of application may be obtained from the undersigned, to whom they should be returned by 12th February, 1958.

FRANK JENNINGS, Group Secretary,
Southampton Group Hospital Management Committee.
Bullar-street, Southampton.

SLOUGH, BUCKINGHAMSHIRE. UPTON HOSPITAL. ANÆSTHETIC REGISTRAR, resident, required, with duties at other hospitals in the Group. Post recognised for D.A. and F.F.A. R.C.S.

Forms of application from and returnable to Secretary, Windsor Hospital Management Committee, Alma-road, Windsor, by 15th February.

SLOUGH, BUCKINGHAMSHIRE. UPTON HOSPITAL. Resident Locum ANÆSTHETIC REGISTRAR required 9th February–1st March.

Applications, with names of 2 referees, to Secretary.

SOUTH BRENT, DEVON. DIDWORTHY CHEST HOSPITAL. Applications are invited from registered medical practitioners for the post of ASSISTANT MEDICAL OFFICER (Junior Hospital Medical Officer grade) at the above Hospital. This is a Hospital of 128 Beds for the treatment of pulmonary tuberculosis and includes a major thoracic surgery unit. Unfurnished bungalow available on Hospital estate.

Applications, stating age, nationality and qualifications, together with names of 2 referees, should be sent, as soon as possible, to the Group Secretary, Plymouth Special Hospital Management Committee, 8, Nelson-gardens, Stoke, Plymouth.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. (815 Beds.) HOUSE OFFICER (general surgery) required, vacant mid-March. Pre-registration post. Hospital recognised for F.R.C.S.

Detailed applications, with copy testimonials, to the Secretary at the Hospital.

STOKE-ON-TRENT. NORTH STAFFORDSHIRE ROYAL INFIRMARY. HOUSE PHYSICIAN required. Pre-registration post vacant now.

Detailed applications, with copy testimonials, to Hospital Secretary, North Staffs. Royal Infirmary.

SWANSEA HOSPITAL, Swansea. (413 Beds.) Glantawe HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the resident post of SENIOR HOUSE OFFICER in the Traumatic and Orthopædic Department of the above Hospital. The post is recognised under the F.R.C.S. regulations for 6 months' casualty training. It offers exceptional experience in all aspects of traumatic surgery as occurring in a large industrial centre and port.

Applications, stating age and experience, together with copies of 2 recent testimonials, should be forwarded to the Hospital Secretary. T. E. JONES, Group Secretary.

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE. Applications invited for the appointment of SENIOR HOUSE OFFICER as Casualty Officer and Orthopædic House Surgeon at Great Western Hospital, Swindon. Post recognised by R.C.S. for 6 months of year's training under Fellowship regulations. Work of Accident and Orthopædic Department, associated with Nuffield Orthopædic Centre (Wingfield Morris Orthopædic Hospital), Oxford, includes large number of industrial injuries. Salary £819 10s. p.a., less charge for residential emoluments.

Full details and names of 3 referees to Secretary, 7, Okus-road, Swindon, Wiltshire, immediately.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. Applications are invited for the post of HOUSE PHYSICIAN for Research in Juvenile Rheumatism, vacant 15th February. Post offers scope for those interested in research, pædiatrics, rheumatology or cardiology.

Applications, stating age, qualifications and experience, with dates, with copies of 2 testimonials, to Secretary.

TAPLOW, near MAIDENHEAD. CANADIAN RED CROSS MEMORIAL HOSPITAL. RESIDENT ANÆSTHETIC REGISTRAR required. Post recognised for F.F.A. R.C.S.

Application forms obtainable from and returnable to Secretary, Windsor Group Hospital Management Committee, Alma-road, Windsor, by 8th February.

TORQUAY. TORBAY HOSPITAL. (166 general beds.) RESIDENT HOUSE OFFICER (surgical), Male or Female, required immediately. Post recognised for F.R.C.S. and pre-registration purposes. There is a complement of 6 Resident House Officers.

Applications, stating qualifications, nationality and age, together with copy testimonials (quoting reference F.955/84), to the Group Secretary, Torquay District Hospital Management Committee, Torbay Hospital, Torquay, S. Devon.

TUNBRIDGE WELLS (near). PEMBURY HOSPITAL, PEMBURY. Applications invited for appointment of SENIOR ORTHOPÆDIC HOUSE SURGEON AND CASUALTY OFFICER (Senior House Officer grade) to begin duties as soon as possible. Recognised F.R.C.S. (Eng.) and tenable for 1 year. Work includes treatment of long and short stay cases and traumatic surgery with large Outpatient and Fracture Clinics under 2 Consultants.

Apply, stating age, qualifications and experience, together with 3 testimonials, to Group Secretary, Sherwood Park, Pembury-road, Tunbridge Wells.

UXBRIDGE GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited for appointment of GERIATRIC REGISTRAR with established geriatric department under control of Consultant Geriatrician. Duties at St. John's, Mount Pleasant and Hillingdon Hospitals. Post vacant 31st March.

Candidates may visit Hospitals by appointment with Group Secretary from whom application forms are obtainable and returnable to at The Furze, Pield Heath-road, Hillingdon, Middlesex, by 10th February.

WAKEFIELD. PINDERFIELDS GENERAL HOSPITAL. Applications invited for position of SENIOR HOUSE OFFICER in Thoracic Surgery Department. Salary £819 10s. p.a. £150 p.a. charged for accommodation.

Written applications, giving personal particulars, details of experience, and 2 names and addresses for reference, to W. BOWRING, Group Secretary, Pinderfields General Hospital, Wakefield.

WAKEFIELD. PINDERFIELDS GENERAL HOSPITAL. HOUSE OFFICER required for Orthopædic Surgery Department. Salary £577 10s. p.a. A charge of £125 p.a. made for accommodation.

Written applications, giving full personal particulars, details of experience, and 2 names and addresses for reference, to W. BOWRING, Group Secretary, Pinderfields General Hospital, Wakefield.

WALSALL. MANOR HOSPITAL. (333 Beds.) GYNÆCOLOGICAL AND OBSTETRIC HOUSE SURGEON. Post recognised for D.Obst.R.C.O.G. Vacant 1st March, 1958.

Applications to Group Secretary, Walsall Hospital Management Committee, General (Sister Dora) Hospital, Walsall.

WARWICK (near). CENTRAL MENTAL HOSPITAL. (1400 Beds.) SENIOR HOUSE OFFICER. Neurosis unit, adult and child psychiatry clinics, departments of electroencephalography, occupational therapy, psychology and social work. Recognised for D.P.M. Accommodation available. Post vacant.

Applications, with names and addresses of 3 referees, to Medical Superintendent.

WATFORD, HERTFORDSHIRE. PEACE MEMORIAL HOSPITAL. (208 Beds.) Applications are invited for the post of HOUSE SURGEON at the above Hospital. This is a pre-registration post and is recognised for F.R.C.S. Salary according to the National Health Service scale.

Applications, with copies of recent testimonials, to the Administrator.

WATFORD, HERTFORDSHIRE. PEACE MEMORIAL HOSPITAL. CASUALTY OFFICER (Senior House Officer). Modern department employing 3 full-time Casualty Officers. Post recognised for F.R.C.S. Resident or non-resident. Vacant end February.

Applications, with names of 2 referees, to the Administrator.

WEST DORSET GROUP HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. MEDICAL REGISTRAR (Registrar grade) required for Weymouth Hospitals, based at Weymouth and District Hospital. Post vacant 1st May, 1958, and tenable for 12 months, with possible renewal for further year. Salary according to experience—£935–£1061 10s. p.a., with deduction of £170 p.a. if resident.

Application form, returnable by 10th February, 1958, from the Group Secretary, West Dorset Hospital Management Committee, Damers-road, Dorchester, Dorset.

WESTON-SUPER-MARE GENERAL HOSPITAL. (104 Beds.) Applications are invited from duly qualified medical practitioners for the pre-registration appointment (resident) of HOUSE SURGEON. Immediate vacancy.

Applications, stating age, qualifications, together with names and addresses of 2 referees, should be addressed to the Secretary, Weston-super-Mare Hospital Management Committee.

WEYMOUTH AND DISTRICT HOSPITAL. (24 Beds.) HOUSE SURGEON (Male or Female) required for resident, pre-registration post, vacant 1st April, 1958, and tenable for 6 months. Recognised for F.R.C.S. examination.

Applications, stating age, qualifications, together with copy testimonials, to Group Secretary, West Dorset Hospital Management Committee, Damers-road, Dorchester, Dorset, immediately.

WIGAN. ROYAL ALBERT EDWARD INFIRMARY. HOUSE SURGEON, pre-registration post.

Applications, with names of 2 referees, to Secretary, Wigan and Leigh Hospital Management Committee, Knowsley House, Wigan.

WIGAN (near). WRIGHTINGTON HOSPITAL. Resident JUNIOR HOSPITAL MEDICAL OFFICER or SENIOR HOUSE OFFICER required. 345 Beds, adults and children. Major surgery, chest, renal and orthopædic, by visiting surgeons from Manchester and Liverpool.

Apply to Secretary, giving 2 references.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. (327 Beds.) HOUSE PHYSICIAN (post-registration) to the Pædiatric Department. Vacant 18th March. Preference will be given to applicants wishing to specialise in pædiatrics. The department is recognised for the D.C.H.

Applications, with copies of 2 testimonials, to the Group Secretary.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. (327 Beds.) HOUSE SURGEON (post recognised by Royal College of Surgeons) required for general surgery with some E.N.T. duties. Approved pre-registration post. Vacant 28th February.

Applications, with copies of 2 testimonials, to Group Secretary.

WINDSOR. KING EDWARD VII HOSPITAL AND UPTON HOSPITAL, SLOUGH. RESIDENT OBSTETRIC AND GYNÆCOLOGICAL REGISTRAR required, resident at the Old Windsor Unit of the former hospital. Preference given to holders of D.Obst.R.C.O.G. Post offers opportunity to gain considerable experience, there being 58 maternity beds and 36 gynæcological beds with weekly outpatient clinics.

Application forms from and returnable to Secretary, Windsor Group Hospital Management Committee, Alma-road, Windsor, by 15th February.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associated Hospital of the Birmingham University Medical School.) HOUSE SURGEON (pre-registration) required. Post vacant immediately.

Apply, giving age and qualifications, with copies of 2 testimonials, to the Secretary.

WOLVERHAMPTON. THE ROYAL HOSPITAL. (An Associated Hospital of the Birmingham University Medical School.) HOUSE OFFICER (pre-registration) E.N.T. Department. Post recognised for the D.L.O. and F.R.C.S. examinations. Vacant 1st March.

Apply, giving age and qualifications, with copies of 2 testimonials, to the Secretary.

WOLVERHAMPTON. THE ROYAL HOSPITAL (An Associated Hospital of the Birmingham University Medical School.) SENIOR HOUSE OFFICER (general surgery). Post vacant immediately.

Apply, giving age and qualifications, with copies of 2 testimonials, to the Secretary.

WOODFORD GREEN, ESSEX. HARTS HOSPITAL. (100 Beds.) SENIOR HOUSE OFFICER required. The Hospital is a modern Sanatorium with Area Chest Clinic. The post offers exceptional opportunities for gaining experience in tuberculosis and diseases of the chest. Accommodation for single person only. Salary £819 10s. p.a. less £150 p.a. for board, lodging, &c.

Applications, with copies of 2 recent testimonials, should be sent immediately to Secretary, Forest Group Hospital Management Committee, Langthorne-road, E.11.

WORCESTER (near). POWICK HOSPITAL. Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER (resident or non-resident). The post offers experience in all branches of psychiatry, including all forms of modern treatment and outpatient clinics. The Hospital has a high admission-rate, is recognised for the D.P.M., and has associated Child Guidance Clinics and a Mental Deficiency Institute similarly recognised. A psychiatric hostel for women patients going out to daily work and a social therapy outpatient unit will shortly be opened. Facilities to attend at the Birmingham Medical School for instruction in neurology.

Applications, with full details and the names of 2 referees, to be forwarded to the Medical Superintendent.

YORK MILITARY HOSPITAL (Civilian Wing). (60 Beds.) SENIOR HOUSE OFFICER required from 8th March, 1958, resident or non-resident. There are 30 general surgical beds and 30 medical beds. The Hospital is associated with the County Hospital, a general hospital of 269 Beds, where relief casualty and emergency work and relief work for house surgeons may be undertaken and where residence can be provided. Salary £819 10s. p.a., less £150 if resident.

Applications, stating age, nationality, experience, qualifications and names of 2 referees, to Group Secretary, York A and Tadcaster Hospital Management Committee, Bootham Park, York.

B.W.I. UNIVERSITY COLLEGE HOSPITAL OF THE WEST INDIES. Applications are invited for the post of REGISTRAR in the Division of Surgery at the above-named Teaching Hospital. The successful candidate will be required to commence duties on or about 1st May, 1958. The appointment will be for 1 year in the first instance, subject to renewal. Salary will be within the scale £900–£100–£1100/£1200–£100–£1500 p.a., depending on previous experience and qualifications. Unfurnished accommodation will be provided at a deduction of 5% of salary. Return passages by sea will be paid for 1 person only, from and to the country of recruitment.

Further information may be obtained from the Hospital Manager and Secretary, University College Hospital of the West Indies, Mona P.O., Jamaica, to whom applications, stating age, nationality, details of qualifications and experience, together with the names and addresses of 3 referees, or copies of 3 recent testimonials, should be addressed not later than 22nd February, 1958.

CINCINNATI, OHIO, U.S.A. Required, House Physician. (54-Bed general hospital.) $450 per month plus furnished apartment.

Write: Our Lady of Mercy Hospital, Mariemont, Cincinnati, Ohio, U.S.A.

U.S.A. PITTSFIELD GENERAL HOSPITAL, Pittsfield, MASSACHUSETTS, U.S.A. RESIDENT in Pathology. 200-Bed Hospital with well-equipped laboratory in beautiful congenial part of New England. Summer and winter sports. English pathologist. Medical school appointment. Successful candidate will have the option of continuing his training at Albany Medical College. Salary $300 monthly. Passage paid.

Apply air mail, Dr. W. BEAUTYMAN, Pathologist.

U.S.A. UNIVERSITY OF MINNESOTA MEDICAL CENTER. ANESTHESIOLOGY RESIDENCIES at the above Center. 2 or 3-year programme with clinical and didactic instruction in all phases of anæsthesia. Board approval. Positions starting every month.

Address, F. H. VANBERGEN, M.D., University of Minnesota Medical Center, Minneapolis 14, Minnesota.

CANADA. CHILDREN'S HOSPITAL, Vancouver, B.C. 2 PÆDIATRIC RESIDENTS required for 1-year period commencing 1st July, 1958, for 83-Bed children's acute and long-term medical and surgical hospital. 6 months' credit given by Royal College of Physicians and Surgeons of Canada toward certification in pædiatrics. Remuneration $175 per month less $20 per month accommodation. Married accommodation available.

Applications, stating age, qualifications, medical school, nationality, marital status, accompanied by recent references and photograph, should be forwarded airmail to Administrator, Children's Hospital, 250, West 59th Avenue, Vancouver, 15, British Columbia.

IBADAN, NIGERIA. UNIVERSITY COLLEGE HOSPITAL. The Board of Management invite applications from experienced medical practitioners for the appointment of REGISTRAR, Department of Pathology, in the newly completed Hospital.

The salary offered for the post is: first year, £1164 p.a.; second year, £1212 p.a. An inducement allowance is payable to expatriate officers of £270 p.a. The appointment will be initially for 1 tour of 12 months and will be renewable by mutual agreement for a further tour.

On satisfactory completion of the agreement a gratuity of £37 10s. will be paid for each completed period of 3 months' service.

An outfit allowance of £60 is payable on first appointment. Partly furnished quarters are provided at a rental of 8½% of salary, and the officer appointed will be eligible for 7 days' leave in the United Kingdom on full pay for each completed month of service in Nigeria. Nigerian officers taking leave in Nigeria will be entitled to 5 days' leave on full pay for each completed month of service.

Free first-class passages to and from Nigeria are provided for an expatriate doctor and his wife on first appointment, vacation leave and on completion of agreement. Free first-class passages to Nigeria will, in certain circumstances, be provided for non-expatriate doctor.

Candidates will be eligible for children's allowances in accordance with existing regulations.

Arrangements can be made to enable doctors to continue the National Health Service superannuation scheme contributions, and details of the revised salary and gratuity payable in such cases will accompany application forms.

Applications should be submitted not later than 15th February, 1958, on the appropriate forms, which will be forwarded, together with additional information, on receipt of a stamped addressed foolscap envelope, by the Adviser on Staff Recruitment, London Office, University College Hospital, Ibadan, 57, Catherine-place, Palace-street, London, S.W.1.

IBADAN, NIGERIA. UNIVERSITY COLLEGE HOSPITAL. Applications are invited from registered medical practitioners for appointment as a JUNIOR HOSPITAL MEDICAL OFFICER to work in the General Outpatients Department and the Staff Medical Service of the new teaching hospital. With over 3000 new patients each month, the Outpatient Department provides clinical work of great interest and widest possible variety.

Applicants should have clinical experience in all branches of medicine, including especially pædiatrics.

The salary offered for the post is £1116 p.a. rising by 6 annual increments to a maximum of £1428 p.a. In addition an inducement allowance of £270, rising to £300 p.a. when the salary exceeds £1284 p.a., is payable to an expatriate officer.

The appointment will be initially for 2 tours of from 12 to 18 months renewable by mutual consent for a further tour.

On satisfactory completion of the agreement, a gratuity of £37 10s. will be paid for each completed period of 3 months' service.

An outfit allowance of £60 is payable on first appointment.

Partly furnished quarters are provided at a rental of 8½% of salary, excluding inducement allowance, and an expatriate doctor appointed will be eligible for 7 days' leave on full pay for each completed month of service in Nigeria. A Nigerian doctor qualifies for 5 days' leave for each completed month of service.

Free first-class passages are provided for expatriate doctors and their wives on first appointment, for vacation leave and on completion of the agreement. Free first-class passages to Nigeria will, in certain circumstances, be provided for non-expatriate doctors.

Candidates will be eligible for children's allowances in accordance with existing regulations.

Arrangements can be made to enable doctors to continue their National Health Service superannuation scheme contributions, and details of the revised salary and gratuity payable in such cases will accompany application forms.

Applications should be submitted not later than 15th February, 1958, on the appropriate forms, which will be forwarded, together with additional information, on receipt of an addressed foolscap envelope by the Adviser on Staff Recruitment, London Office, University College Hospital, Ibadan, 57, Catherine-place, Palace-street, London, S.W.1.

Public Appointments

CIVIL SERVICE COMMISSION. Medical Officers in Government Departments :—

Ministry of Health

MEDICAL OFFICER (limb fitting). Post for Man or Woman aged 28 or more on 1st January, 1958. Must be registered medical practitioner and experienced in orthopædic or general surgery. Duties prescribing and supervision of fitting of artificial limbs, rehabilitation and provision of other surgical appliances.

Ministry of Labour and National Service

H.M. MEDICAL INSPECTORS OF FACTORIES. 3 posts for Men or Women aged 28 or more on 1st January, 1958. Must be registered medical practitioners preferably with considerable postgraduate experience. Experience in industry or D.I.H. or acquaintance with physics in relation to applied medicine an advantage. Duties include investigation into occupational health of industrial workers and supervision of factory doctors.

Ministry of Pensions and National Insurance

MEDICAL OFFICERS. 5 provincial posts (1 in Blackpool) for Men or Women aged 28 or more on 1st January, 1958. Must be registered medical practitioners with good clinical experience. Experience in medical boarding or occupational health an advantage. Duties mainly concerned with claims for disablement benefit and war pensions.

PNEUMOCONIOSIS MEDICAL OFFICER post for Man or Woman aged 28 or more on 1st January, 1958. Must be a registered medical practitioner with special experience in chest work. Duties include membership of Pneumoconiosis Medical Panels and clinical examination of claimants to disablement benefit and supervision of radiographical work.

Starting salary (London) from £1825 at age 35 (lower for under 35s) to £2165 at 40 ; higher for over 40s with exceptional qualifications. Scale maximum £2350. Promotion prospects, non-contributory pension, 5-day week in general. Interviews in London, early March.

Write Civil Service Commission, 6, Burlington-gardens, London, W.1, for application form quoting No. 58/58. Closing date 14th February, 1958.

MINISTRY OF HEALTH. Senior Medical Officer (London) post for Man or Woman aged 28 or more on 1st January, 1958. Must be registered medical practitioner with degree or diploma in Public Health and have recent experience as Medical Officer of Health or Deputy M.O.H. or comparable administrative experience. Duties concern Public Health and Local Authority Administration and regional work of National Health Service. Salary £2700. Promotion prospects, non-contributory pension, 5-day week in general. Interviews London, early March.

Write Civil Service Commission, 6, Burlington-gardens, London, W.1, for application form quoting No. 58/58. Closing date 14th February, 1958.

BIRMINGHAM. CITY OF BIRMINGHAM. Applications are invited from registered medical practitioners for the post of MEDICAL OFFICER IN CHARGE OF IMMUNISATION (Male or Female). Candidates should hold the Diploma of Public Health. The officer appointed will be in administrative charge of combined diphtheria-whooping cough immunisation, B.C.G. vaccination and vaccination against poliomyelitis and influenza and may be required, from time to time, to perform general duties in the Public Health Department as desired by the Medical Officer of Health. The successful candidate will be required to devote his/her whole time to official duties. The appointment will be subject to three months' notice on either side. The salary scale for the post is £1625–£55–£1900 p.a. Medical examination; superannuation scheme.

Applications, with full particulars of qualifications and experience, together with the names of 3 persons to whom references may be made, should be forwarded to the Medical Officer of Health, Council House, Congrove-street, Birmingham, 3, not later than 12th February, 1958.

LINCOLN. COUNTY OF LINCOLN. Parts of Holland. Appointment of DISTRICT MEDICAL OFFICER OF HEALTH, PORT MEDICAL OFFICER AND ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH. Applications are invited from persons qualified in accordance with the Sanitary Officers (Outside London) Regulations, 1935 and 1951, for the mixed appointment of :—

(*a*) Medical Officer of Health and Port Medical Officer for the Borough of Boston (3/11ths).

(*b*) Medical Officer of Health for the Rural District of Boston (3/11ths).

(*c*) Assistant County Medical Officer of Health (5/11ths).

Private practice will not be permitted. The salary will be determined at the time of appointment commencing at not less than £1600 4s. 6d. and rising on a scale to a maximum of not less then £1961 13s. 11d. Car allowance on the prescribed scale.

Application forms with particulars and conditions of appointment may be obtained from the County Medical Officer of Health, County Hall, Boston, to whom they should be returned by 8th February, 1958. H. A. H. WALTER,

10th January, 1958. Clerk of the County Council.

STOKE-ON-TRENT. CITY OF STOKE-ON-TRENT. PUBLIC HEALTH DEPARTMENT. Applications are invited from qualified medical practitioners for the post of ASSISTANT MEDICAL OFFICER, mainly on the Maternity and Child Welfare Services. Candidates should have experience in diseases of children and obstetrics. Opportunity will be given for hospital contact with pædiatrics and obstetrics. The possession of a D.P.H. or D.C.H. will be considered an additional qualification. The salary will be at the rate recommended by the Whitley Council with commencing salary according to experience. The appointment will be subject to the provision of the National Health Services (Superannuation) Regulations 1947, and the successful candidates will be required to pass a medical examination.

Forms of application may be obtained from the Medical Officer of Health, Public Health Department, Glebe-street, Stoke-on-Trent, and should be returned, accompanied by copies of not more than 3 recent testimonials, not later than Wednesday, 26th February, 1958. HARRY TAYLOR, Town Clerk.

LEICESTER. CITY OF LEICESTER. Applications are invited from registered medical practitioners for the appointment of SCHOOL MEDICAL OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH. The duties will consist mainly of School Health Service and Maternity and Child Welfare work. Salary, in accordance with the National scale, will be £1050–£50–£1200–£55–£1475 p.a. Previous experience in a similar capacity will be taken into consideration in determining the commencing salary. The appointment will be superannuable and subject to termination by 3 months' notice.

Full details of the appointment may be obtained from Dr. E. K. MACDONALD, Medical Officer of Health and Principal School Medical Officer, Grey Friars, Leicester, to whom applications should be sent, on the official form, within 14 days of the appearance of this advertisement.

TREASURY MEDICAL SERVICE. Applications are invited from medical practitioners, practising in the districts detailed below, for appointment, in a part-time and mainly advisory capacity, as LOCAL TREASURY MEDICAL OFFICER for each of the places or groups of places shown. The town shown in parentheses after the place-names indicates the Head Post Office Area in which the place, or group of places, is situated. Successful applicants will be required to examine and report on the condition of certain Government Officers, teachers, candidates for appointment, &c., who may be referred to them from time to time; and to attend when summoned to an emergency case of accident or sudden illness occurring in a Government office in the neighbourhood. Fees for this work, and mileage allowance where necessary, will be paid on a scale agreed with the British Medical Association.

Intending applicants should write, within 14 days, to Treasury Medical Adviser, Treasury Chambers, Whitehall, S.W.1, for a form on which application may be made. Applicants should be not more than 60 years of age.

The places for which applications are invited are as follows :—

ENGLAND AND WALES

Durham and Sacristan (Durham).
Birtley (Durham).
Sketty, Swansea (Swansea).
Bedworth (Nuneaton).
Poynton (Stockport).
Bristol, 1 and 2 (Bristol).
Crewkerne (Yeovil).
Llansantffraid (Oswestry).
Haywards Heath, Cuckfield and Lindfield (Haywards Heath).
Staveley (Chesterfield).
Isleworth (Hounslow).
Middlesbrough, Haverton Hill, and Port Clarence (Middlesbrough).
Abbeytown and Silloth (Carlisle).

SCOTLAND

Banff, King Edward, and Macduff (Banff).
Dunblane (Stirling).
Clarkston, Busby and Eaglesham (Glasgow).

NORTHERN IRELAND

Clogher and Augher (Armagh).
Aughnacloy (Armagh).

GOVERNMENT OF UGANDA. Medical Officers with qualifications registrable in the United Kingdom required for general duties. Successful candidates may be posted to any station in Uganda. During earlier years of service officers will be expected to carry out general medical and surgical duties including a varying amount of public-health administration, school medical work, and training of subordinate African medical staff. In most stations, even if remote from larger towns, it is possible to maintain interest in any particular branch of medicine or surgery to which officer is attracted. In most stations work is based on a district hospital which may vary in size from a comparatively small hospital meeting the needs of a backward community to a large hospital with modern facilities where specialisation in the different branches of medicine, surgery and obstetrics is possible. "R" practitioners, i.e., practitioners liable for call-up under the National Service Acts, may apply to be considered and, if appointed, will be granted indefinite deferment of call-up on completion of a minimum tour of 2 years. Appointments can be on permanent basis, subject to 2 years' probation, with pension (non-contributory); or on 30–36 months' contract with gratuity (taxable) payable on satisfactory completion of service. Normal retiring age is 55, but at age 45 officers may retire with full pension earned (subject to minimum of 10 years' service). Gratuity for contract service is 13½% of total salary drawn, not including allowances. Candidates from National Health Service may retain superannuation rights up to 6 years and receive gratuity (taxable) of 20% of their salary after engagements. Salary ranges from £1284 to £2115. Starting-point determined by experience. 4 extra increments can be given to successful candidates possessing F.R.C.S., M.R.C.P., and D.P.H. and other approved higher qualifications. Other allowances in accordance with current regulations. Permanent Medical Officers are eligible to be considered for promotion to super-scale posts in Uganda and other territories in medical administration, or, if they possess higher qualifications and suitable experience, in specialist posts. Quarters provided at rental varying from £21 to £78 according to size and type, and hard furniture at a rate of £12 to £24 according to scale. Free air passages for each journey are provided up to equivalent of 4 adult tourist-class air fares for officer, wife, and dependent children. If, in the interest of Government an officer is required to proceed on leave after a short tour of 15–18 months, there is no limit to the number of family passages. Taxation at East African rates, generous home leave granted after each tour in addition to which casual local leave is allowed at the rate of 16 days per annum. Primary educational facilities available in all the larger stations. Education subsidies are payable to officers, which vary from £90 a year (or half the school fees, whichever is less), for primary education for first child, to £190 a year (or 3/5ths of school fees, whichever is less) for secondary education for each of second and subsequent children.

Application forms obtainable from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD.117/9/02).

MIDDLESEX COUNTY COUNCIL. COUNTY HEALTH DEPARTMENT. ASSISTANT MEDICAL OFFICER (whole-time) required initially in Area 4 (Finchley and Hendon). Duties concerned with supervision of the health of mothers and young children and School Health Service. Diploma in Public Health or in Child Health, and previous local authority experience an advantage. Salary £1050–£50 (3)–£55 (5)–£1475. Established, pensionable. Prescribed conditions.

Apply, stating age, qualifications, experience, and names of 2 referees, to Area Medical Officer, Town Hall, Hendon, N.W.4, by 8th February, not 1st March as stated in previous advertisement. (Quote W.729TL.) Canvassing disqualifies.

FALKLAND ISLANDS. Medical Officer required for general hospital duties in Stanley or as district Medical Officer in West or East Falklands. "R" practitioners, i.e., practitioners liable for call-up under National Service Acts, may apply and, if appointed, will be granted indefinite deferment of call-up on completion of minimum tour of 2 years. Appointment on pensionable terms or on agreement for 3 years; or from National Health Service with retention of superannuation rights up to 6 years plus gratuity (taxable) of 20% of aggregate salary. Salary scale £880–£1180 p.a. Minimum entry point £940, with additional increments for experience. Small allowance paid for children; minimum of 2 children to qualify. Education allowance also payable. Quarters provided—at rental of 5% of salary in Stanley, but free for Medical Officer employed in the districts. Free passages for officer, wife and family up to 3½ passages in all. Very low income-tax.

Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD.117/50/02).

GOVERNMENT OF UGANDA. Specialist Anæsthetist required to administer anæsthetics at Mulago and Nakasero Hospitals, Kampala. May be required to teach anæsthetics at Makerere Medical School for which Mulago is the teaching hospital. Candidates must possess medical qualifications registrable in the United Kingdom and F.F.A.R.C.S. or a D.A. gained prior to November, 1953. Appointment on permanent basis with pension (non-contributory) or on short-term contract with gratuity. Salary from £2300 to £2400 a year, starting point determined by qualifications and experience. Pension earned at rate of 1/600th of final pensionable emoluments for each completed month of service. Gratuity (taxable) for contract service is 13½% of total salary drawn, not including allowances. Candidate from National Health Service may retain superannuation rights up to 6 years and receive gratuity (taxable) of 20% of salary after engagement. Quarters at low rental. Items of hard furniture supplied at additional rental of £12 to £18 a year. Free passages in both directions, for officer serving tour of 30–36 months—i.e., 4 air passages provided for officer, wife and dependent children or sea passages up to cost of 3 adult fares. European primary schools in certain centres; in other centres, subsidy of £90 p.a. (or half school fees, whichever is less), for education of first child outside East Africa, with additional subsidy of £9 for second child and £18 for third or subsequent child attending school at same time. Secondary school facilities in Kenya. For a child at boarding school in United Kingdom (or elsewhere in Commonwealth) subsidy of £140 p.a. (or 3/5th of fees, whichever is less), with additions as above for second and subsequent children. Income-tax at local rates. Local leave is permissible and generous home leave is granted after each tour.

Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD.117/9/035).

General Practice

For an ***Executive Council post*** *(England and Wales) apply on form* **E.C.16A** *obtainable from the council. Mark envelope "Vacancy."*

UPPERMILL, YORKSHIRE. Applications are invited for VACANCY—Urban—list at present 2584. Residential and surgery accommodation available for purchase. Successful applicant will be required to take over on the 5th July, 1958. Apply on form E.C.16A to the undersigned, from whom further particulars may be obtained, not later than 14th February, 1958.

C. H. STABLER, A.C.I.S., Clerk, West Riding Executive Council,
5, St. John's North, Wakefield.

ZETLAND EXECUTIVE COUNCIL. Applications are invited from registered medical practitioners to fill the VACANCY in the medical service area of Yell and Fetlar, Shetland Isles. Persons on list number approximately 1500 and there is a substantial mileage payment available in the practice. Form of application and further particulars may be obtained from the Clerk, Zetland Executive Council, Lerwick; with whom applications should be lodged not later than 15th February, 1958.

Hospital Services: Non-Medical Appointments

BANBURY, OXFORDSHIRE. HORTON GENERAL HOSPITAL. Applications are invited for the appointment of a BIOCHEMIST (basic grade), vacant on 1st April. Candidates should possess a science degree, preferably with honours in biochemistry or chemistry.

Apply, with names of 2 referees, to the Secretary.

CARDIFF HOSPITAL MANAGEMENT COMMITTEE. HOSPITAL BIOCHEMIST (Senior grade) required for Group Laboratory, St. David's Hospital, Cardiff. National Health Service salary and conditions.

Form of application from Group Secretary, 44, Cathedral-road, Cardiff.

Miscellaneous

Doctors needed for construction projects in Persia, starting between now and June. 1 year contract; longer if desired. £2200, tax-free; transportation and living expenses paid. Considerable free time for study if desired.—Please write to PETER BURGESS, M.D., P.O. Box 1601, Tehran, Iran.

Doctors to compile Medical Surveys. A pharmaceutical company requires doctors to make specialised and complete studies of available literature on new therapeutic agents.

A panel is being formed of doctors who are interested in both the pharmacological and clinical aspects of medicine and who would be interested in preparing long and detailed studies.

For details of remuneration, &c., please apply with a note of your qualifications and special fields of interest.—Address No. 363, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

MEDICAL OFFICER

required for Middle East service by large Oil Company. Preference for those with overseas experience and some knowledge of tropical work. Age about 35 and preferably single. Emoluments total at least £2250 p.a., paid home leave after 2 years, pension fund, fully furnished air-conditioned accommodation provided at nominal rent. Please reply in detail to Box No. 1435, c/o CHARLES BARKER & SONS LTD., Gateway House, London, E.C.4.

A newly created post

DIRECTOR OF RESEARCH

will shortly become available in EVANS MEDICAL SUPPLIES LTD. The Director will be responsible for the research to be carried out in a new research block at present in course of erection at Speke, Liverpool. The Company is especially interested in scientific pharmaceutical development.

Applicants should be of high scientific attainment, and the salary paid will be fully commensurate with these attainments and the responsibilities involved.

Applications should be made to the Managing Director, Evans Medical Supplies Ltd., Speke, Liverpool, 19.

Too Little Room at the Top? Young doctor beginning to climb or half-way up ladder, looking for alternative with less crowded upper rungs, invited to join top newspaper (not the one you think) and write about medicine instead of practising it. Rapid climb possible for right candidate with writing ability and critical interest in medical affairs and research.—Reply to Address No. 367, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Charity Commission. In the matter of the Charity called The Devon and Exeter Benevolent Medical Charity, in the County of Devon.

The Charity Commissioners for England and Wales hereby give notice that an Order has been made by them establishing a Scheme for the regulation of the Charity.

Copies of the Order and Scheme can be seen between the hours of 9.30 A.M. and 5 P.M., at the Commissioners' Office at 14, Ryder-street, St. James's, London, S.W.1, where copies can be purchased at the price of 4d. each.

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Doctors requiring applications, theses copied: Write to MANTON (WESTMINSTER) LTD., 98, Victoria-street, S.W.1 (VIC 0141), who are specialists.

"Pregnancy Diagnosis by the Xenopus Method", 24-hour service. Send specimens of urine and £2 2s. fee. Hæmatology, Biochemistry, Flame Photometry.—WELBECK BIOLOGICAL LABORATORIES, 26, Park-crescent, Portland-place, W.1 (MUSeum 5386–7).

Typewriting and Duplicating. First-class work at moder- ate prices by experienced medical typists. Electric machines. —SYBIL RANG, 21, Heath-street, Hampstead, London, N.W.3 (HAM 5329/0504).

Old medical books, pictures, manuscript notebooks, letters, &c., wanted by a collector.—Address, No. 343, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Microscopes. Highest prices paid for good modern types. Send or bring your equipment for valuation.—WALLACE HEATON LTD., 127, New Bond-street, W.1.

Mr. Arthur Shaw (medical agent) will have his book *Doctors for Hire* published by Robert Hale Ltd. Date of publication will be announced later.

For Sale. Dean's unrectified X-ray unit 90kV-75 mA. Tilting table, chest stand, screen. Perfect condition. Installed £350.—Address No. 364, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Interesting post as students' adviser in adult women's college in London might suit woman doctor.—Apply: Address No. 365, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Experienced nurse-receptionist and telephone operator seeks post. West End preferred.—Address No. 366, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Pregnancy diagnosis (fee 21s.). Specimens of urine accepted for testing (Hogben test) from doctors, hospitals and clinics anywhere. Results available within 24 hours. Fee reduced for hospitals and clinics. Telephone or write for details: FAMILY PLANNING ASSOCIATION, 64, Sloane-street, London, S.W.1. SLOane 0451 or 9112.

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